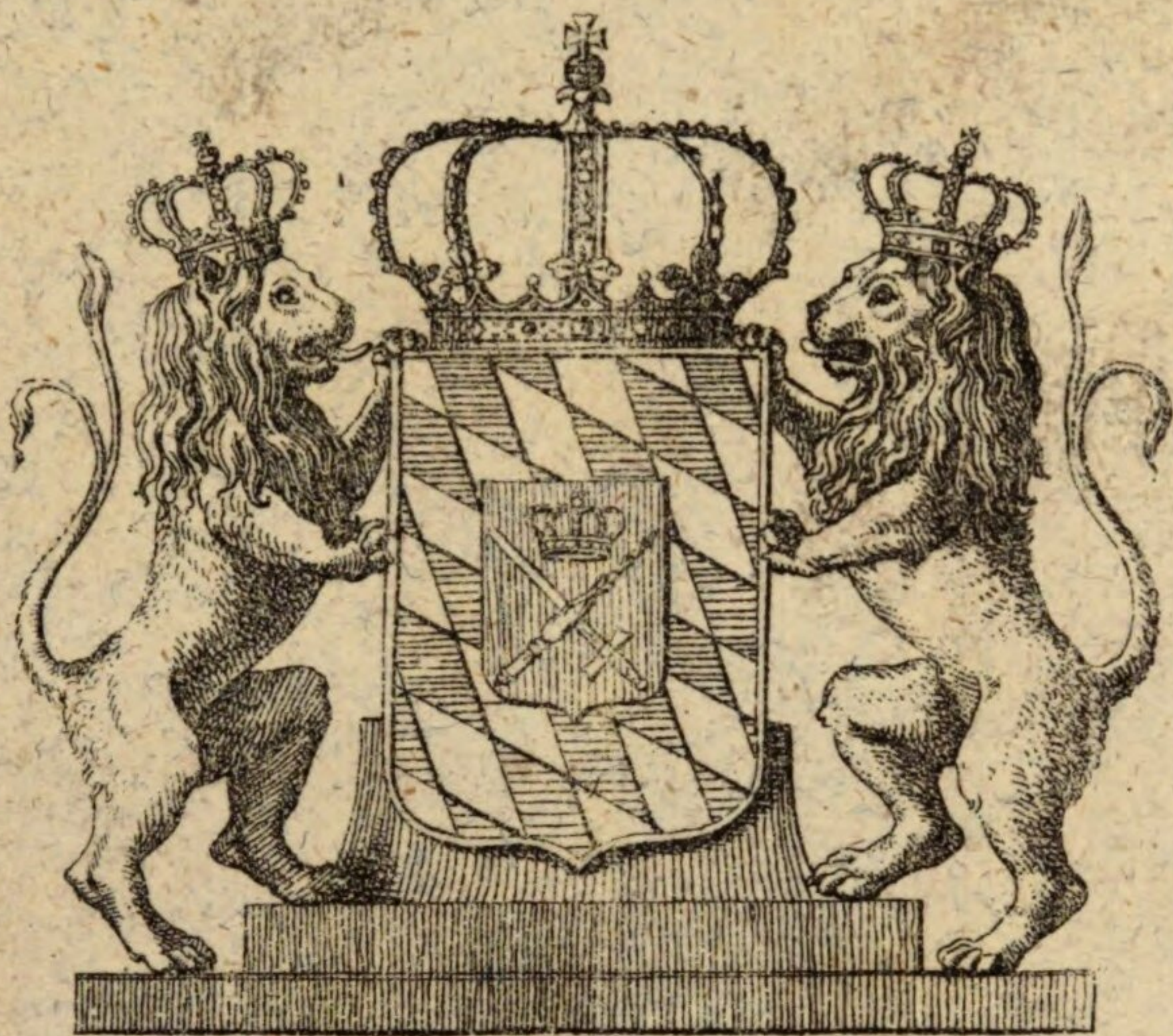




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E L E M E N T S
OF
M E D I C I N E.

VOL. I.

IN TWO VOLUMES.

LONDON

PRINTED BY J. JOHNSON, ST. PAUL'S CHURCH-YARD.

STIMULANTS

OF

MEDICINE

VOL. I

THE
ELEMENTS OF MEDICINE
OF

JOHN BROWN, M.D.

TRANSLATED FROM THE LATIN,

WITH COMMENTS AND ILLUSTRATIONS,

BY THE AUTHOR.

R
A NEW EDITION, REVISED AND CORRECTED.

WITH

A BIOGRAPHICAL PREFACE

BY THOMAS BEDDOES, M.D.

AND

A HEAD OF THE AUTHOR.

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" some exceptions) of great genius---must be considered as a confirma-
" tion of the truth of the theory, as they were probably arrived at by
" different trains of reasoning."

DR. DARWIN. ZOONOMIA. p. 75.

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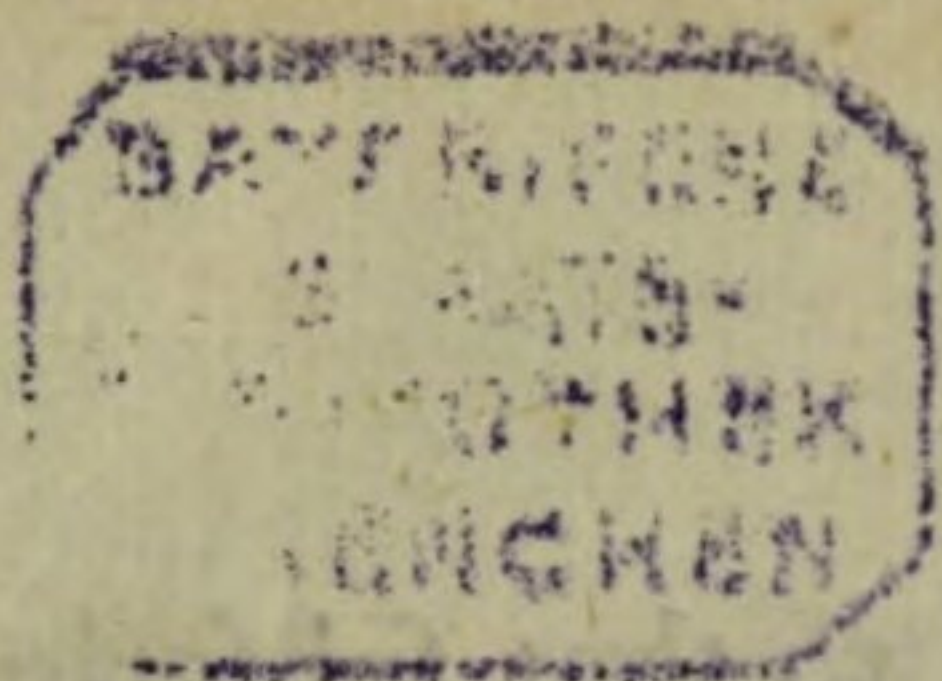
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VOLUME I.

LONDON:
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TO
THE INGENIOUS,
THE CANDID,
AND
HUMANE,
THE FOLLOWING PRODUCTION
OF
UNFORTUNATE GENIUS,
IS INSCRIBED BY
THE EDITOR.

TO
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Account of the Origin and Object of this Edition, and of the Circumstances in which it differs from the preceding.

I CAN scarcely imagine an undertaking in which, a little while ago, I was less likely to engage than an edition of Dr. BROWN'S *Elements of Medicine*; and I think it proper to state, that it was not either the hope of fame or of profit, or enthusiastic attachment to the ingenious author's system, that induced me to submit to a task so extremely unpleasant. The penury in which Dr. Brown lived, and the distress in which he left his family, are so well known, that to mention them can be no indelicacy. Soon after his death, a subscription in their behalf was set on foot, and produced considerable temporary advantage. But as the cir-

cumstances which gave rise to that subscription still, in a great measure, subsist, it was conceived by some benevolent persons, that a republication of his system, of which few copies remain on sale, might contribute to the same desirable end. This resolution being finally adopted, it became highly necessary to find a person willing to superintend the edition. For this purpose application was made to me; and who could refuse his assistance to so good a design? I fear, indeed, the author's family will not derive any great benefit from the adventure. The very attempt, however, to serve them, may afford this consolation to men of genius, pining under poverty and neglect; that, although they themselves may receive no reward for their useful labours, a sense of their merit may at last procure some regard to those who are nearest and dearest to them; an idea, in my opinion, full as soothing as the prospect of posthumous fame.

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In his translation, Dr. Brown seems to have exceeded his usual negligence. His English, it is true, when he is unfettered by the Latin idiom, shows that he was poorly qualified to do his own work justice, had he exerted his utmost care.—These two causes conspired with the laboured perplexity of his Latin style, to render the translation disgustingly uncouth throughout, and in many passages almost impenetrably obscure. Imagine the words of a schoolboy, raw in English, taken down, as he is in the usual manner rendering a Latin author to his master, and you will have a just notion of the style of the work, which I had to refit for publication. Besides, strange as it may appear, he sometimes mistakes either his own meaning, or the import of the English terms, in which he tries to convey it. Here is an instance. CLIX. *Sitis et calor, quae insignes quoque in morbis sthenicis notae sunt, a sthenicâ in faucium et cutis extremis vasculis diathesi*

thesi pendent, ita ea obturante, ut nondum perspiratio reddatur, sed sanguinem tamen ad penultimos vasculorum fines pertransire sinat, et corporis genitum calorem, ob retentam adhuc perspirationem, subter cuticulam cumulet. This passage is thus translated:—*Thirst and heat, which are also remarkable symptoms in sthenic diseases, depend upon the sthenic diathesis in the extreme vessels of the fauces and skin; the diathesis so obstructing the vessels as not to allow a return of perspiration, but to suffer however the blood to pass into the very neighbourhood of the ends of the vessels, and, by means of the suppression of the perspiration, to accumulate under the cuticle the heat generated in the system.* Again: *Calor frigori succedens,* he translates, *Heat overcoming the effect of cold.*

An entirely new translation was what I could by no means undertake. The next thing was to endeavour to render the author's meaning plainer by correcting his language throughout. Hitherto, few, I imagine,

gine, except those who attended the lectures in which it was delivered, have had any precise knowledge of a system, which appears to me, in spite of many disadvantages, to have wrought a memorable change in medical opinions and practice. This knowledge will, I hope, henceforward be found far less difficult to acquire.—In the typography of the first edition there was a remarkable peculiarity. The supplementary words inserted in the text were printed in *Italic* characters, and very frequently short explanatory phrases were placed at the foot of the page. This seems to have been done in imitation of the English bible; nor do I doubt but the author considered his Latin text as sacred, both on account of the purity of the style and the excellence of the doctrine. But as few readers, I conceive, will regard it with the same reverence, and as the effect is disagreeable, the printer has been directed to change the *italic* for roman characters,

and

and to take the short phrases into the text. There were also certain corrections, as well as additions to the original work, given in English in the text, and in Latin at the bottom of the page. These I have caused to be omitted. They can be of no use, except in case of another edition of the Latin work, for which they may be easily procured from the former edition of the translation. To complete this account of the alterations I have made, it is necessary to add, that a few of the author's longer notes, for the reader's convenience, are received into the text.

With this statement let the reader compare my instructions, which were “to give
 “a corrected translation of the elements,
 “such as the author, had he taken more
 “time, would have made or wished to make;
 “for it should still remain his book; some
 “freedoms indeed, if that be thought necessary,

“ cessary, may be taken, as the original Latin will still remain.”

I have only to say further, that I have placed a table of contents at the head of each chapter ; and instead of dispersing the principal observations I had to make on the system in notes, I thought it would be more advantageous to give them in connection.—

An illustration by Mr. CHRISTIE, which has been found to assist some persons in conceiving the Brunonian doctrines, and a table, composed many years ago, by Dr. Lynch, are also added to this Edition.

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P R E F A C E

TO THE

O R I G I N A L W O R K.

THE Author of this work has spent above twenty years in learning, teaching, and diligently scrutinizing every part of medicine. The first five past away in hearing others, in studying what he had heard, implicitly believing it, and entering upon the possession as a rich and valuable inheritance. His employment, the next five years, was to explain more clearly the several particulars, to refine and give them a nicer polish. During the five following years nothing having succeeded to his satisfaction, he grew indifferent to the subject; and, with many eminent men, with the very vulgar, began to deplore the healing art as altogether uncertain and incomprehensible. All this time passed away without the acquisition of any advantage; without that,

which

which of all things is the most agreeable to the mind, the light of truth; and so great and precious a portion of the short and perishable life of man, was totally lost. He was, at this period, in the situation of a traveller in an unknown country, who, after losing every trace of his way, wanders in the shades of night; nor was it till between the 15th and 20th year of his studies that a faint gleam of light, like the first break of day, dawned upon him.

Seventeen years ago, in the thirty-sixth year of his age, he had his first fit of the gout. For many years before, he had lived generously, except for the half year, previous to this attack, during which he had observed a more sparing diet. In about six weeks the disease finished its course; it did not return till six years after, and not even then, but in consequence of unusual low living for between five and six months. He was now in the vigour of his age, and, excepting the gouty taint, and some debility, brought on by his late unusual abstemiousness, his constitution was good. The gout, according to theory, long prevalent among physicians, was said to depend

depend upon plethora and excessive vigour; vegetable aliment was enjoined, wine was forbidden, and the careful execution of that plan of cure was promised to be rewarded with exemption from the disease. A whole year past in strict adherence to this regimen. During this year, instead of exemption from the disease, he had no less than four fits, exceedingly violent and painful, and of very long duration: In short, the whole year, except fourteen days, was divided between limping and excruciating pain.

If according to the theory over-proportion of blood and excess of vigour were the cause of the disease, how he considered, were such distressing symptoms to be explained? Why had not the disease made its first appearance twelve or fifteen years before, at a time when there was in reality more blood and vigour in the system (*a*)? Why did it only come
on

(*a*) The blood is made from the food and is in proportion to its quantity, quality, and the completeness of its digestion. Now, before each of his last fits for the time specified in the text, as well as during the whole course of the attacks of the second year, his food
b had

on after a reduction of diet considerable both in degree and duration? Why had so great an interval of time, during which he had returned to his usual full diet, intervened between the first fit, and these recent ones? and, why had the disease twice, almost instantaneously, come on after the change of a full nourishing diet to a sparing one? The solution of this question was, at length, afforded by the statement of one more comprehensive.—What is the effect of food, drink, and the things that support life? They produce strength. What is their effect afterwards? Always less and less. What is it towards the end of life? So far from giving strength, they evidently prove weakening. Nay, the very same powers, by which life was at first supported, at last put an end to it, commonly through the intervention of disease.

Notwithstanding disease first and afterwards death are produced not by the priva-

had been almost solely vegetable, and, therefore, was not suited to produce enough, much less an excessive quantity, of blood, and the digestion was also more imperfect.

tion

tion, but by the abundance of those things, by which life is sustained, he perceived that debility was the cause of his disorder; and that the remedy was to be sought, not in debilitating but strengthening measures. To this sort of debility he thought proper to give the name of *indirect*. Such for two years was the success of the invigorating plan, which he immediately after his reflections and queries carried into execution, that at the end of this time he had only a slight fit, not equal to the fourth part of any of the former fits. Now no physician will deny, that the recurrence of such a disease as the gout, which had made four attacks in one year, would have been more frequent still during each of the next two years, had the same treatment been continued; nor will any one think the addition of two fits every year too much. The mild fit was four times less severe than either of the more violent ones. Multiply, therefore, twelve by four, and according to this computation, the proportion, in which the disease was alleviated will be as eight and forty to one. During the first year, he had

made use of vegetable food alone. During these two years, his only food was of the land animal kind, and of the most nutritious quality. His choice was directed to the best in kind; and he observed no other precaution except being moderate in the quantity he used. Most kinds of fish, whether from the sea or fresh water, he found nearly as debilitating as vegetable matter, when solely or chiefly relied upon for a meal. A young gentleman, who lived with him, and had laboured under a very severe asthma, in consequence of the same treatment, had only one fit at the end of the same two years, instead of a fit every day, as he had during the common treatment.

Afterwards, to refute a prevailing opinion, that the gout cannot depend upon debility, because inflammation accompanies it; little doubting that the inflammation itself depends on debility, he subjected the question to experiment. He invited some friends to dinner and by taking certain stimulants in their presence (*b*), recovered the most perfect use

(*b*) These are mentioned in Dr. Jones's Enquiry:

of that foot, with which, before dinner, he could not touch the floor for pain. By this he saw, that not only the gout itself, but the inflammation accompanying it, was asthenic, that is, depending on debility. And he found, afterwards, the inflammations affecting the throat in the putrid and gangrenous fore throat, and the joints in *rheumatalgia*, or that rheumatism which depends upon debility, and is improperly denominated chronic rheumatism to be asthenic: as also the inflammation, which is imagined, with whatever justness, sometimes to attack the brain at the end of typhus.

As the gout affects the alimentary canal, and especially the stomach, and in its course is attended with symptoms similar to those that occur in dyspepsia; he was desirous to know if there was any affinity betwixt these diseases, and he found that dyspepsia equally with gout depended on debility, and yielded to stimulant remedies. Nay, he afterwards ascertained, that all spasmodic convulsive diseases of the alimentary canal, and nearly a

the diseases of children, (c) were of the same stamp.

Continuing his investigation of spasmodic and convulsive diseases, when they occupy the organs of voluntary motion; he discovered that their nature was also the same in kind, but only greater in degree; as they are exemplified in the spasms and pains, that occur in various parts of the external surface of the body, and in epilepsy, and in tetanus themselves. Hence he discerned, that a vast number of affections, in which, upon the supposition of their being inflammatory, no limits had been set to the use of the lancet,

(c) A gross and dangerous error! Children are very subject to inflammatory diseases of the thorax, which require bleeding; sometimes when the hooping cough is prevalent, peripneumony supervenes: in which case bleeding is almost essentially necessary to the preservation of life.—Children are subject to other inflammatory diseases as well partial as general. The *croup* and *hydrocephalus internus*, if the latter be sthenic at first, are forms of inflammatory affection, almost peculiar to children. It is true, thousands are cut off at an early period of life, and tens of thousands are kept languishing during childhood in a state of misery, by asthenic diseases. But their chief cause is the want of the necessities of life. EDITOR.

instead

instead of arising from an over-proportion of blood and excessive vigour, or any other such cause, depended upon an under-proportion of that fluid, and other causes of debility, and were to be cured, not by bleeding, or any other evacuations, but by filling the vessels, and restoring the strength of the whole system.

At first, for the purpose of removing fits of the gout, he went no farther than the use of wine, and other strong liquors, with nourishing food, that is, seasoned meat, and kept the more powerful remedies in reserve. But, for many years past, his surprizing success in the use of the latter, has enabled him to find in opium and some other stimuli, the secret of repelling the fits of the gout as often as they returned, and, at the same time, of re-establishing the healthy state, a secret that has hitherto been so much wanted and despaired of. This he has often effected both in himself and in other persons. It is now seven years since he has been able entirely to prevent the return of the disease.

By similar instances in actual practice, he found that bleeding discharges, which are

called hæmorrhages, do not depend on plethora and vigour, but upon penury of blood or debility arising from some other source, and therefore he rejected them from the number of sthenic diseases (*d*), among which they had been arranged in the first edition of his text book, reserving a place for them among the asthenic diseases in the second volume of that work. For he saw, that bleeding, other evacuations, abstinence, cold, and sedatives, as they are called, proved hurtful; and that the stimulant plan of cure alone was successful. Even wine and brandy, which had been thought so hurtful in those diseases, he found the most powerful of all remedies in removing them. Hence he learned, that in all the diseases, in which others had supposed there was abundance of blood, there was a deficiency, that the real cause of these diseases was debility, arising from defect of blood and other stimuli; and that stimulants, given in proportion to the degree of the cause, were the proper remedies.

(*d*) Sthenic diseases, as will be afterwards explained, are such as depend upon an excessive application of the several powers that otherwise produce health.

By

By the light that thus beamed in from practice, he saw, that the cause and cure of fevers, both intermittent and continued, were the same.

Gradually led, as it were, by the hand of nature, around the whole circle of asthenic diseases, he became convinced that they all depended upon the same cause, that is, debility; that they were all to be removed by the same kind of remedies, to wit, stimulants (*e*); and that neither their cause nor their cure differed but in degree.

With respect to sthenic diseases, the cause or cure of which nobody had understood; he was long ago aware that neither the inflammation, nor the other symptoms attending them, as had been universally believed by systematics, were the cause, but the effect: that the inflammation arose from the cause, i. e. the diathesis, or habit, and that it did not occur at all except in cases where the diathesis was very strong. In fine, he experi-

(*e*) Wherever the word stimulant is used without a particular qualification of its degree, the degree is understood to be greater than that required in the healthy state, as will afterwards more fully be explained.

enced

enced in his own person, that catarrh was not produced by cold, according to the common opinion, but by heat, and other stimuli, and was removed by cold and other debilitating powers. By this discovery he was led to form a proper judgment of the catarrhal symptoms in the measles: Concerning which the great man who so much improved the cure of sthenic diseases, but who never attained to any knowledge of the asthenic, was misled by the alexipharmic physicians. And, as these symptoms are the most dangerous part of the disease, he was right in supposing, that the proper treatment of them was of great importance to the cure of the whole disease. In consequence it came out that the refrigerating antiphlogistic plan was of as much service in the measles as in the small-pox.

In sthenic diseases he illustrated the cause, enlarged the plan of cure, accounted for the symptoms, and reduced the whole to a certain principle; he distributed all general or universal diseases into two forms, a sthenic and an asthenic. He demonstrated that the former depended upon excess, the latter upon deficiency, of exciting power; that the former

mer were to be removed by debilitating, the latter by stimulant, remedies ; that the noxious powers, which excited either, were the remedies of the other, and the contrary ; and that they acted in the same manner as the powers which produce the most perfect health, with only a difference in degree. He extended the same doctrine to plants. He laid down a principle which is illustrated and confirmed by every particular appearance, and by which every particular appearance is connected and illustrated. Finally, he demanded whether the medical art, hitherto conjectural, incoherent, and in the great body of its doctrines false, was not at last reduced to a science of demonstration, which might be called the science of life—a question which has been answered in the affirmative by every one who has been at due pains to understand the doctrine.

THE
AUTHOR'S PREFACE
TO THE
TRANSLATION.

A PRESSING, and very general, demand for an English translation of the *Elementa Medicinæ*, made several years before the publication of the second edition of that work, and successively repeated with an increasing importunity ever since; a desire of spreading the knowledge of a doctrine, which had exhibited so many indubitable proofs of its importance and utility to mankind; an ambition, not quite extinguished by advancing years, domestic cares, and a declining state of health, to get the better of the keenest, and most universal, persecution, that ever was raised against an useful and extensive discovery; the necessity for a translation in
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the present decaying state of the knowledge of the Latin language; the danger of the doctrine coming before the public from adventurers unequal to the task; and some other circumstances, partly of a private, partly of a domestic, nature, with which it would be impertinent to trouble the reader; all these, at last prevailed with the author to submit, for once, to a task, otherwise not desirable, that of translating his own work. Such a task seemed more naturally calculated to lay the foundation of the commencing fame of an ingenious pupil. But, as no one of many, whose literature and knowledge of the subject completely qualified them for the undertaking, wished to supersede the occasion for his engaging in it himself; and as the courage of several persons of a different description kept not pace with their affectation or interestedness; it is to be hoped the public will not be displeased to receive the work from the author himself. This performance is intended for the use of three sets of readers; those who do not readily enter into a thought conveyed in pure Latin, and, who, therefore, might wish to be possessed of a translation

a translation for the sake of comparing it with the original, and, thereby, of acquiring, renewing, or improving their knowledge of the latter; those, who are only acquainted with such Latin, as has prevailed in modern times; and, lastly, those, who either cannot, or will not be subjected to the trouble of reading Latin at all, and who, surely, may often be better employed.

Both this, and the original work, are intended not for the exclusive use of medical readers, but also for that of the public at large, it being evident, that, without even the exception of the professional knowledge of each individual, that of his own health is preferable to all other. And such an acquisition becomes valuable in proportion to its justness and solidity. The public are presented with a work, that claims the merit of having reduced the doctrine and practice of medicine to scientific certainty and exactness. With respect to the form, in which it is delivered, it is stripped of that jargon of numerous, unmeaning or misleading terms, and all that mystery either in style or matter, that has hitherto rendered the pretended healing
art

art impenetrable to the most intelligent and discerning, and locked it fast up in the schools. No terms are admitted but the few that necessity imposed, and these are every where defined. The style is simple, and suited to the simplicity of the subject. In the language and composition, as far as the thoughts, which are new throughout, and that restraint, which is inseparable from exactness of translation, permit, clearness is every where preferred to elegance, and diffusion to brevity.

The author, in prefixing his name to both forms of his work, has thrown the gauntlet to its numerous, but anonymous, opposers. They are, therefore, called upon, now or never, to disprove it, and the judicious and candid part of mankind to judge between the parties.

OBSERVATIONS
ON THE
CHARACTER AND WRITINGS
OF
JOHN BROWN, M.D.

VOL. I.

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OBSERVATIONS

ON THE

CHARACTER AND WRITINGS

JOHN BROWN, M.D.

Vol. I.

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CHARACTER AND WRITINGS
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JOHN BROWN, M.D.

AT the time I undertook to superintend this republication of the Brunonian System of Medicine, I was pleased with the prospect of recording the life of its extraordinary author. Of the vicissitudes he experienced I had formerly heard enough to be persuaded that they would furnish a narrative sufficiently amusing. I was, moreover, aware of circumstances in his history, which it would be impossible to relate without adverting to the condition of medicine—a subject concerning which, unfortunately for many who have occasion to seek assistance

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from

from that art, gross misconceptions prevail throughout society.

I find myself, however, obliged to relinquish the office of biographer, such as I had conceived it. Of late I have had few opportunities of personal inquiry; and very little of the information, I had reason to expect, has reached me. Nevertheless, I may succeed in delineating the moral portrait of my hero, for his character was exceedingly open to observation; and in his productions the temper and understanding of the man are most faithfully exhibited.

A person, who was his school-fellow, and afterwards his pupil at school, informs me that his parents were mean, but honest. What was the particular occupation of his father I have not heard. Had his condition been superiour to that of a petty village artificer, I suppose the original destination of the son would have been higher, for this is an affair in which parents seldom err by excess of humility.

Mr. WAIT, the late respectable rector of Dumfries school, supposes that John Brown was born in 1735 or 1736. He was a native
of

of the parish of Buncle, in the county of Berwick. He himself, in order to associate his name with that of John Duns Scotus, commemorates the place of his education rather than of his birth. From expressions he sometimes dropped in his lectures, I conclude that he was endowed with that quickness of sympathy and that sensibility to the charms of nature, which characterize the infancy of genius. This warmth of heart, I believe, he never lost.

I am sorry I cannot minutely trace the steps, by which he advanced towards intellectual eminence. Mr. WAIT, without whose communications mine would have been a meagre narrative, states that “ he
 “ early discovered uncommon talents. His
 “ aptitude for improvement,” continues this gentleman, “ induced his parents, after having fruitlessly bound him apprentice to a
 “ weaver, to change his destination. He
 “ was, accordingly, sent to the grammar-school of Dunse, where, under Mr. Cruickshank, an able teacher, he studied with
 “ great ardour and success. Indeed, he was,
 “ at that time, regarded as a prodigy. I
 “ went

“ went the same road to school with him;
 “ and his application, I well remember, was
 “ so intense that he was seldom without a
 “ book in his hand.” It is a singular coincidence, that the two individuals, who in these times have been principally celebrated for their attempts to extend the knowledge of animal nature, should have been both natives of Scotland, and that each should have been put to a coarse mechanical employment—John Brown to the trade of a weaver, and John Hunter (according to common fame and the report of one of his biographers) to that of a carpenter or wheelwright.

By an anonymous writer, who seems well-informed, it is asserted that Brown “ submitted in his youth to be a reaper of corn
 “ to procure for himself the means of improvement. With the price of such labour he put himself to school, where his abilities and ardour attracted the notice
 “ of his master, and procured him the place
 “ of assistant to the school (a).” His revolt

(a) Analytical Review for August, 1789, p. 450.

from the loom, according to this account, must have been attended with highly honourable circumstances: and the reader will desire fuller information concerning both his motives and conduct than has been transmitted to me.—From the custom of the country, we may presume that he had received much more instruction, before he was put apprentice, than commonly falls to the lot of boys of his condition in England. Considering the energy of his mind, we cannot be surprized that a little cultivation should have rendered the gloomy and uniform labour of a weaver distasteful. But this, though true, is perhaps not the whole truth. As he was repelled on the one hand, so he might, on the other, have had some peculiar attraction towards literature. The supposition is, at least, conformable to analogy; since in the history of eminent men, when we are fully acquainted with it, we never fail to discover some incident, which has determined each individual towards the pursuit in which he has excelled. Now I imagine Brown may have applied himself with such unusual assiduity

duity to school learning from a persuasion that it would qualify him to propagate more effectually the tenets of his sect. My conjecture is founded on the following expressions of Mr. Wait: "he had at this time"—the time of his entrance at Dunse school—"sober habits: he was exceedingly religious, and so attached to the sect of *Seceders* or *Whigs*, as they are called in Scotland, that I really believe he would have thought his salvation hazarded, if he had heard or read the profane discourses of the Scotch establishment. He aspired to be the minister of a purer church, of which it was expected he would prove a chosen vessel." Nor is this force of religious sentiment unusual in youthful minds. Samuel Johnson was early struck with superstitious terror: Haller had scarcely emerged from his infancy, when he began to preach to his father's domestics: and in families, where the hatred of sect against sect is cherished, one may generally perceive its most virulent tokens in the boys. The most humanized of my readers may remember the time when he glowed with zeal against persons who had been

been

been taught a different creed: and where reflection, softening the heart into universal charity, has not introduced perfect indifference as to the religion or irreligion of others, the pious flame must be still alive.

The years of Brown's grammar education appear to have been, in no common degree, well-spent and happy. He had vigour of body with vigour of mind, and exerted both. He himself, with much complacency, relates proofs of that strength, which his appearance indicated. When a boy, he says he valued himself on being a stout walker. At fifteen, on a summer's day, he performed a march of fifty miles between Berwick upon Tweed and Morpeth in Northumberland. Some years afterwards, he travelled on foot, resting but one hour and making but one "hearty" meal, from four o'clock in the evening of one day till two in the evening of the day following—two-and-twenty hours—with so short an intermission! During this excursion, he traversed "all sorts of ground, in "roads and out, over smooth and plain, "mountain and heath."—We have seen, however, that he could make a more rational use

use of his strength than merely to stake it against time and space.

While he was thriving in godliness and knowledge, but at what precise period I am not informed, there occurred an incident which finally diverted him from the path he had hitherto with so much alacrity pursued. At a meeting of the provincial synod of the Merse and Teviotdale, a party of his school-fellows urged him to accompany them to the parish church of Dunse. He manifested reluctance, but yielded to their importunity, and remained to hear the sermon. The scandal did not pass unnoticed. He was summoned before the session of the seceding congregation; but not choosing either to atone by an apology for his sin in mixing with profane worshippers, or to wait for a formal sentence of excommunication, he abdicated his principles, and professed himself a member of the establishment. Thus, bigotry is often but the masque of avarice, pride, or ambition; and here, though the nature of his present zeal was a secret to the zealot himself, we see it fully disclosed by this instructive anecdote. Encouragement at first,

first, and afterwards flattery, from his brethren, seem to have formed a strong connection between the peculiar articles of his faith and a sense of his personal importance; the moment this connection was dissolved, an alteration of sentiment succeeded, not very much unlike that produced in Luther's mind by the offensive measure of the pope: the opinions he had so warmly cherished lost all their value in his estimation; or rather, perhaps, became odious from the disgrace with which they threatened him. Religious enthusiasm, however, survived this sacrifice to pride; and his friends still recollect the vehement indignation he expressed on account of the dangerous tendency of Mr. HUME's speculative writings; which, some time after this event, he found much the subject of conversation at Edinburgh.

Those who regard the Scottish establishment as the true apostolical church may have cause to rejoice, that so ardent a seceder did not persevere in his original zeal. For complaints are sometimes heard in Scotland, as well as in England, of the increase of sectaries; and he might have become formidable

as a propagator of schismatic doctrines. Among the divines of his nation he would have been unrivalled in classical learning; and I see not what should have hindered a man endowed with so acute and comprehensive a genius from attaining equal pre-eminence in polemical divinity. He would have marched with alacrity into the field of controversy, and confidently assailed the stoutest champion of the adverse host. His vehement eloquence must have been deeply felt by audiences, to whom his dialect was intelligible and inoffensive: and, as little regard will be paid to style, when the thoughts are intent on the high concerns of *grace, faith, good works, election, and reprobation*, he might have seconded, with his pen, the effect of his personal labours. Had the incredulity of the age induced him to undertake a general treatise on christianity, he was capable of rendering Grotius obsolete by language of superiour purity and more skilful management of his arguments.—If he had borne the cross as a seceding minister, he must have led a life of the strictest temperance; since in Scotland the clergy, even of the established

blished church, cannot safely indulge in open dissipation. I need not therefore explain how much leisure he would have had for his classical and theological pursuits. Nor would he have enjoyed fewer or less lively sensations of pleasure than a different course procured him; for to a person of his temperament, fame and fanaticism may well supply the place of wine.

He continued at the grammar school till he had nearly attained the age of twenty. In the summer of 1755, his reputation, as a scholar, procured him the appointment of tutor in a family of some distinction in the neighbourhood of Dunfermline. But here, it seems, he did not long continue to be an agreeable inmate. It is likely enough that he had added the stiffness of pedantry to the sourness of bigotry. But I have no information concerning his deportment; and should any of his disciples think a fuller narrative due to their master's memory, some notices may, I conceive, still be collected from the surviving members of the family.

When deprived of this employment, he repaired to the university of Edinburgh. In
this

this busy seat of science, after going through the usual course of philosophy, he regularly entered upon his theological studies: he attended the lectures, diligently applied to the perusal of the authors recommended by the professor, and proceeded so far as to deliver in the public hall a discourse upon a prescribed portion of Scripture: which is an academical exercise previous to ordination as a clergyman of the Scotch establishment. At this point he stopped, and relinquished the profession of divinity altogether. The sequel will sufficiently explain his motives for this change. Its immediate consequence was his retreat from Edinburgh to Dunse. Here, to gain time, as may be supposed, for arranging the plan of his future life, he engaged himself as usher to the school which he had lately quitted. In this capacity he officiated from Martinmas 1758 to Martinmas 1759. Mr. WAIT, who professes himself to have benefited by the new usher's instructions, mentions, as a proof of the accuracy of his memory, that after once reading over the lesson, consisting of two octavo pages in Latin, he would lay aside the book and *pre-lect*

lect the whole over, without mistaking a single word. In the course of this year, one of the classes in the high school at Edinburgh becoming vacant, Brown appeared as a candidate, but, “on a comparative trial, “ proved unsuccessful.”

While he remained at Dunfermline, it was remarked that the strictness of his religious principles was relaxed. He even began to be accounted licentious both in his principles and conduct. At a later period he was open enough in his avowal of irreligion.—Whatever scope the fact may afford to the eloquence of persons, accustomed to decry Edinburgh as a school where the reason of young men is exercised more than their faith, it seems too evident to be denied, that this revolution of opinion in our student of theology took place during his residence there. The distinguishing portion of his hereditary creed he had abjured from pique; nor can he be supposed to have had any rational conviction of the remaining articles; if rational conviction can only originate in sincere doubt and perfect carelessness in regard to the conclusion to which examination may lead.

lead. Under such circumstances it is easy to conceive by what a precarious tenure a speculative student, placed in a situation where information is at hand and inquiry not only free but fashionable, holds the benefit derived from the religious lessons of his parents and preceptors. Some unlucky suggestion may start a perplexing scruple, the serious investigation of this scruple may raise an host of difficulties, and deliberation terminate in unbelief.

At the time he renounced divinity, the scene before him must have directed his thoughts to the study of medicine. The only difficulty lay in the expence: but his observations might have suggested the means of overcoming this difficulty, independently of the encouraging circumstance which I shall immediately relate. He must have been aware that students of physic are, in general, by no means such proficient in classical acquirements as to speak Latin with tolerable fluency. Hence, before the examinations for a doctor's degree, which are carried on in Latin, it is common to have recourse to a private instructor, who converses with the candidate

candidate in that language. This preparation is familiarly called *grinding*, as a similar process at Cambridge is, I think, called *cramming*. The translation of inaugural dissertations into Latin, which the students, in most instances, compose for themselves in English, is another occupation from which a good scholar may derive emolument at Edinburgh; the ordinary gratuity for a translation being five, and for an original composition, where that is required, ten guineas.

Of his qualifications for these employments, accident, shortly after his unsuccessful competition for the vacancy in the High school, furnished him with an agreeable proof. Application being made to one of his friends to recommend a person to turn a thesis into Latin, Mr. Brown was mentioned. He performed the task in a manner that exceeded the expectations both of the friend and the candidate. When it was observed how much he had excelled the ordinary style of such compositions, he said *he had now discovered his strength, and was ambitious of riding in his own carriage as a physician*. Towards the close of 1759, therefore, he set-

tled at Edinburgh in the double capacity of teacher and student. At the opening of the session, he addressed a Latin letter to each of the medical professors. They were perhaps already apprized of his merit as a classical scholar; and they were all induced by his application to present him with a ticket of admission to their lectures. After so auspicious a beginning, he soon became famous as a teacher of Latin; and I believe he never afterwards refused to exercise his pen in the translation of theses. He was also at all times ready to furnish an original dissertation according to the system his employer preferred.

I have obtained no particular information concerning the first four years of his medical studies. His circumstances were probably more flourishing than at any former period. From the beginning of the masterly preface to his Elements it appears that he prosecuted his studies with his characteristic ardour. In 1763, an old acquaintance found him in as high repute among his fellow-students as he had formerly been among his school-fellows—a distinction which has never been obtained without

without the conjunction of ability with industry. He seems, however, during the intervals of his application, to have given into the most dangerous of vices; “for the language of his appearance seemed to show that he had taken liberties with a constitution originally firm and vigorous.”

In certain universities, destitute of foundations or yearly stipends for scholars, the students live dispersed in ordinary dwelling-houses: and this dispersion, according to my observation, is not less favourable to diligence and regularity than residence in colleges. In mixed company the vicious propensities, peculiar to any class of individuals, will never be countenanced; or, in the language of Dr. Adam Smith, a whole company can never sympathize in those unbecoming practices, to which a few only feel themselves inclined. By this mutual correction, the association of persons of different ages and sexes becomes the great preservative of good manners and good morals. Colleges, which, after the example of monasteries, seem instituted on purpose to prevent this salutary variety, doubtless give frequent occasions to emulation in

those excesses, to which young men are particularly prone. A nice observer, too, may perhaps discover that their monastic discipline irritates full as much as it restrains. At Edinburgh the keepers of lodging and boarding houses have generally sober habits; and the observance of early hours is enforced with as much effect, though with less form, than by the porter's list, the fine, and *imposition*. As far as discipline regards learning, every man must estimate its value by his opinion of the effect to be produced by setting grown gentlemen tasks. Where there have existed none of those restraints, which always give more or less disgust, I have seen a large majority of students pursuing knowledge with as great eagerness as any of their equals in age were elsewhere pursuing the pleasures of the chase; and from the same motive—the immediate satisfaction it affords. Nor do I believe that the acquisition of knowledge can be otherwise than agreeable, except from the fault of the tutor or the institution.—If examinations are considered as powerful incentives to diligence, none can equal in severity those which are carried on at the voluntary meetings,
which

which it has long been the custom to hold at the great school of medicine in Scotland, and which have since been established among the students at the inns of court in London, with the approbation of the most distinguished professors of the law.

Brown, who now seems to have supported himself in affluence as a single man, perceived in the establishment of a boarding-house for students, a resource which would enable him to maintain a family. His reputation for various attainments was, he thought, likely to draw round him a number sufficient to fill a large house. With this prospect he married in 1765; and his success answered his expectations. His house was soon filled with respectable boarders. But he lived too splendidly for his means, and “ managed so
“ ill that in two or three years he became
“ bankrupt. Towards the end of 1770,
“ though reduced in his circumstances, he
“ maintained the independence of his cha-
“ racter, proving himself to be, in the lan-
“ guage of his favourite Horace,

——*Satis inter vilia fortis.*

“ He seemed to be happy in his family, and,
“ as far as I could ever observe, acquitted
“ himself affectionately as an husband and a
“ parent. He still frequented the medical
“ classes,” (or lectures); “ and I heard him
“ say he had now attended them ten or ele-
“ ven years.” [Mr. WAIT].

We have seen how liberally Brown was treated on his entrance upon the study of medicine. From the celebrated Cullen he early received the most flattering marks of attention. This speculatist, like Boerhaave and other men of genius in the same station, was accustomed to watch the fluctuating body of students with a vigilant eye, and to seek the acquaintance of the most promising. There was a period when he made the greatest exertions to gain proselytes to his opinions; and his mind was doubtless alive to that pleasure which the encouragement of merit affords to all who are capable of discerning it, when no dread of rivalry interferes with the gratification. But Brown's power over the Latin language served him as a peculiar recommendation; and his circumstances might induce Cullen to believe that
that

that he could render this talent permanently useful to himself. Taking therefore its possessor "under his immediate patronage," he gave him employment as a private instructor in his own family, and spared no pains in recommending him to others. A very strict and confidential intimacy ensued. The favoured pupil was at length permitted to give an evening lecture, in which he repeated, and perhaps illustrated, the morning lecture of the professor; for which purpose he was intrusted with Cullen's own notes. Though Mr. Wait had not recollected the profuse encomiums of his old schoolfellow, his warmth of attachment would be fully testified by subsisting tokens; to his eldest son, for instance (WILLIAM CULLEN BROWN) were given both the christian-name and surname of his patron. Other proofs of mutual confidence and esteem might be collected: but friendships originating in protection are very prone to terminate in enmity, unless difference of rank and pursuits totally preclude competition; and it is well known that the friendship in question was far from permanent. My materials do not furnish distinct

information concerning the cause or pretext of an alienation, which was certainly injurious to the dependant party, and perhaps detrimental to society. In a communication from Dr. S——, likewise an old and intimate acquaintance of Brown, it is said, that after the failure of his boarding-house, he “ became impatient, and unfortunately quar-
“ relled with Dr. Cullen, from a supposition
“ that the doctor had it in his power to ex-
“ tricate him from embarrassment by placing
“ him in a more liberal and lucrative situa-
“ tion in the medical line.” A report I remember to have heard at Edinburgh coincides with this intimation; but I relate it only on the authority of rumour. When the theoretical chair of medicine became vacant either on the death of Dr. Alexander Monro Drummond, or the refusal of this promising young physician to fill it, Brown gave in his name as a candidate. On a former occasion of a nature somewhat similar, he had disdained to avail himself of recommendation, which he might have obtained with ease; and though, according to the friend whose words I have just quoted, he acquitted him-
self

self in a manner far superiour to the other candidates, private interest then prevailed over the juster pretensions of merit. At the present competition he was also without recommendation; and, I suppose, could have obtained none. Such was his simplicity, that he seems to have conceived nothing beyond pre-eminent qualifications necessary to success; nor did he harbour any suspicion of that debasing system of influence, which has infected the land so thoroughly, that the post of a scavenger, were it held by appointment, would hardly be procured without cabal, or retained without servility.—The magistrates of Edinburgh appoint professors to the college, as well as masters to the school. They are reported deridingly to have inquired who this unknown and unfriended candidate was; and Cullen, on being shown the name, after some real or affected hesitation, is said to have exclaimed in the vulgar dialect of the country—*Why, sure, this can never be our Jock!* With this sneer the application of a man was set aside, whose equal the patrons of the Edinburgh professorships will probably not

not soon have an opportunity of rejecting. Though this account should come near the truth, it does not follow that the municipal board deserves much censure. In the execution of their trust they are indeed bound to examine the pretensions of the competitors, or rather to cast their eyes round wherever the English language is spoken, and select the person best qualified for the office, even if he should not enter the lists of competition. But they had not our means of deciding; and although he, who enjoyed so high a reputation among his fellows, and to whom Cullen partly committed the credit of his system, could not well be deemed a contemptible candidate, there did not perhaps exist reasons to warrant them in raising him to the vacant chair. Public fame seems the surest guide for such electors; and the reputation, so long enjoyed by the University of Edinburgh, proves that it is a guide sufficiently sure. The danger is, lest its patrons, relying upon the established credit of the seminary, should at any time suffer intrigue to interfere with their choice. In this case a splendid college may indeed be erected, but students from different
regions

regions of the globe will soon cease to crowd its halls.

Whether such a sarcasm was uttered or not, Cullen (*b*) completely estranged the mind of his Latin secretary on a subsequent occasion. As I am not sufficiently acquainted with the particulars, I cannot venture to appreciate his conduct; but the mortal affront was given, when Brown attempted to gain admission into that philosophical society which published the *Edinburgh Essays*. After this transaction, an open rupture took place; but, however it arose, the account furnished, if not written, by Brown, evinces that both parties had before conceived a secret jealousy of each other: the account is as follows: “There is a junto
“ of men in Edinburgh who at all times, from
“ fear of his” (Brown’s) “learning and abilities,
“ have been his determined enemies;
“ and by all arts, but good ones, have uniformly
“ fought his ruin, and that of a large
“ and innocent family depending upon him.
“ This conduct, first of all, was the return they

(*b*) Jones’s *Enquiry into the State of Medicine*, 1781, p. 358.

“ made him for great services done to them
“ as a body, and to certain individuals of
“ them as friends. Their open conduct to
“ him was friendly ; their secret a plot, a
“ dark Catalinian conspiracy. Accordingly,
“ his suspicion of it was late, the full de-
“ tection later He chose to tear off the
“ mask of their pretended friendship
“ His first step was to make application for
“ being made a member of a certain literary
“ society, to which no man’s petition had
“ ever been rejected before, or since : fore-
“ seeing that he would be rejected. This
“ accordingly happened. But he was pre-
“ viously advised by one of themselves, as a
“ friend, to withdraw his letter of application.
“ A frivolous and false cause was assigned
“ for the opposition. The friendly monitor
“ who had perceived that our author had a
“ new doctrine of medicine in meditation,
“ began, as it would appear, to fear that it
“ might terminate in the extinction of one
“ which he assumes as his own. He was
“ therefore the prime mover of the plot
“ The answer was, in a tone of firmness,
“ that the application would not be with-
“ drawn . . .

“ drawn and that the applier” was resolved to make the present conduct of the adviser and his friends “ the criterion of
“ his judgment of their intentions towards
“ him.” The *body* must mean the college of physicians; the *services* I presume to have been the translation of their Pharmacopœia into Latin, and the *plotter* unquestionably was Cullen. After the failure of this bold experiment upon the strength of his credit, the projector had evidently no time to lose in seeking some fresh resource for the support of his family. The following notice from Dr. S—— applies to this part of his history.

“ Being estranged from Dr. Cullen’s
“ family, he gradually became his greatest
“ enemy, and shortly afterwards found out
“ the new theory of physic, which gave
“ occasion to his publishing the *Elementa*
“ *Medicinæ*, in the preface to which work
“ he gives an account of the accident that
“ led to this discovery. The approbation
“ his work met with among his friends
“ encouraged him to give lectures upon his
“ system.

“ system. Though his lectures were not
“ very numerously attended by the students,
“ on account of their dependence upon the
“ professors, still it was always remarked
“ that the cleverest among them were all,
“ as they were now called by way of nick-
“ name, BRUNONIANS. Hence arose that
“ persecution which was carried on with
“ such rancour that it at length obliged him
“ to leave Edinburgh.” This account of the
origin of the Brunonian system, as we may
conclude from the preceding quotation, is
not exact; and in other particulars the state-
ment, from evidence I shall afterwards pro-
duce, will appear overcharged. Meanwhile,
if it be undeniable that, as the Cullenian
hypotheses were sinking into disrepute, many
of the ablest students resorted to the standard
of Brown, it ought not to be forgotten that
it was joined also by the most idle and dis-
solute. Their misconduct and their master’s
imprudence in private life, together with
the offensive manner in which he spoke of
himself and of others, kept the system and
the author in constant discredit.

He

He was soon in a state of open hostility with all the medical teachers at Edinburgh; and it required nicer management than he could observe to keep on fair terms with other practitioners of medicine. To a disciple, who was desirous that he should meet one of the professors in consultation, he remarked, “that he (the disciple) was unacquainted with the interested arts of those men; that all their ideas in medicine, and particularly in its practical part, were so diametrically opposite to his, that they never could be brought to any sort of reconciliation.”—Like other reformers, who have had to wrestle with powerful opposition, he committed and sustained injustice. Like them too, where his system was concerned, he gradually lost his sense of equity. If we judge by his language—the only way he had to show his disposition—his countryman Knox could scarcely have exceeded him in ferocity. Thus, having remarked that the doctrine of spasm, suggested by Van Helmont, and clumsily wrought up into a system by Hoffmann, was banished by Boerhaave from the country which gave it birth, “it found at last,” he adds,

adds, “ amidst a new persecution raised
“ against it by the pupils of Boerhaave—
“ then in possession of the medical chairs
“ at Edinburgh—a friend and protector in
“ Dr. Cullen, who had lately become one
“ of the number of those professors.

“ This brat,” he proceeds, “ the feeble,
“ half-vital, semi-production of phrenzy,
“ the starveling of strained systematic dull-
“ nefs, the forlorn outcast of the fostering
“ care to which it owed its insect vitality,
“ was now to be pampered by a crude and
“ indigestible nutriture, collected from all
“ the materials which had composed the
“ several fabrications of former erroneous
“ systems, was to be decorated with every
“ foreign plumage, and in this its totally
“ borrowed and heterogeneous form, instead
“ of the hideous caricatura, which it was,
“ contrived to excite the derision of man-
“ kind, it was to be ostentatiously obtruded
“ upon the world as a new, and respectable
“ doctrine, and held up, forsooth, as the
“ formidable rival of a splendid system (c).”

(c) Observations on the old Systems of Physic, 1787,
p. xxxi.

Such is the torrent of metaphors that rushes upon his imagination when he thinks of the system of his ancient friend and master. Of the past and present condition of the healing art he speaks with greater coolness, but with equal contempt:

“ The accomplishments of the regulars
“ have been learning and ingenuity in a few,
“ not directed to improvement in their own
“ profession: a mere shadow of learning, or
“ the study of a bad kind of it, as botany
“ and the other branches of natural history,
“ in the greatest number; fly attention to
“ reputation for skill; intriguing with their
“ brethren for countenance; opposition to
“ improvement; persecution of discovery;
“ narrowness of mind under the thin veil of
“ a false pretention to liberality; affectation
“ of decency; all for the purposes of trade;
“ silence, from a consciousness of inability
“ lity to speak so as to gain by it; formality,
“ pomp, stateliness, gravity, all making a
“ motley group of absurdities; invincible attachment
“ to the errors of their education;
“ aversion to improvement; ready

“ upon every slight occasion to break out
 “ into rage and transport ; invincible bigotry
 “ and prejudice ; an over value of what
 “ learning they have any pretensions to ; an
 “ under value of all they are conscious they
 “ want.

“ As every country, in proportion as it is
 “ distinguished by riches, and openness of
 “ manners, for that very reason, becomes the
 “ emporium, the scene of action, for high-
 “ waymen, footpads, pickpockets, swindlers,
 “ sharpers, gipsies, regular practitioners in
 “ law and physic, quacks in both professions,
 “ so England has long held and still holds
 “ the pre-eminence over all her neighbour
 “ countries, in being, for the reason assigned,
 “ the place of common resort, in which a
 “ comfortable subsistence is afforded to all
 “ those different denominations of purse-
 “ takers.

“ *Exilis domus est, ubi non et multa supersunt*
 “ *Et fallunt dominos, et prosunt furibus.*”(c)

(c) Observations, pp. lxxxix—lxxxv.

During

During the heat of contention between the opposers and defenders of the new system, an event happened which I wish I could fairly pass over in silence. But as it has already been the subject of more than one publication (*d*), there can be no pretence for the omission.

Mr. Isaacson, a student of medicine, had been seized with a fever, which in its progress exhibited the most alarming symptoms. Dr. Duncan was first called in, and afterwards Dr. Monro. Dr. Robert Jones, a new graduate, and a friend to Mr. Isaacson, tampered with the nurse to induce her secretly to administer strong stimulant medicines: they were given, as he asserts, for about twenty-four hours, with such effect that, on their next visit, the physicians “declared the patient free of fever,” though before he had all the symptoms of approaching death. In the afternoon, however, of the same day, he

(*d*) See Jones’s Enquiry, p. p. 134—150.—Letter to Dr. R. Jones, by Andrew Duncan, M. D. Cadell, 1782.—Letter from Philalethes to Dr. Andrew Duncan, without date or title, announcing a reply to the former publication, which, I believe, never appeared.

was seized with a raging delirium. Jones in his alarm applied to his preceptor; the preceptor being told that the nurse desired to see him, ordered “her to be brought before him.” When she was brought before him, he complimented her by a solemn appeal to her understanding concerning the great principles of his system. “He endeavoured to assure her “that there was either no inflammation in “the case at all, or that it was a very different affection from the inflammation that “physicians were acquainted with; that instead of requiring bleeding and other evacuant antiphlogistic means, it required the “very same treatment which had been last “employed; and he asserted with confidence “that the intermission of the stimulant powers “through the day was the cause of all that “had happened; that, in short, the present “affection was a disease of debility of the “whole system, predominant in the brain, “in consequence of the great sinking of “strength which constantly follows a total “cessation of the use of such highly stimulant powers. He begged therefore as the “life of a fellow-creature was at stake, and “as

“ as she had been so late a witness of the good
“ effects resulting from the method of cure,
“ the continuance of which he still recom-
“ mended that she would not allow pre-
“ judice and impressions from the false theo-
“ ries of physicians, among whom she had
“ been conversant, to prevail over the high
“ probability of success from this mode of
“ cure. He dismissed her, after obtaining a
“ promise that she would continue the plan
“ of cure in question (e).”

Brown, for a comic figure, was not inferior to Sancho Panza ; nor indeed much unlike that entertaining personage : and this clandestine conference, if it had been delineated by Cervantes, would have made a good companion for the nocturnal interview between Don Quixote and the venerable duenna, Donna Rodriguez.

The patient, thanks be to fortune, skill, or virtue! recovered. The Brunonians placed the cure to the credit of their practice, which they reported to have been successful after Dr. Duncan and Dr. Monro had given the

(e) Jones, p. 136.

patient over; they published the case; they asserted that the cure “gave great vexation “to the attendant physicians and all their “partizans;” and with the policy usual among aggressors, they complained that Dr. Brown was ill-treated, because he was blamed in “the numerous circles of the physicians’ “friends and his enemies, while no opportunity was offered him of vindicating himself from these charges.”

The nurse had threatened, if the secret proceedings should transpire, to deny the performance of her part of what in the *Enquiry* is termed the *paction*. Dr. Duncan, roused by these rumours, applied for information to the nurse and her assistant, to Mr. Isaacson himself, to the mistress of the house where he lodged, to Mr. Edmund Goodwin, and Dr. Monro. In his letter he has published their respective attestations and depositions upon oath; it appears that the clandestine proposals were rejected, and that only one unsuccessful attempt was made by the negociator himself to administer a dose of his diffusible stimulants. According to the nurse’s testimony, Mr. Jones
on

on her first refusal declared, if she “ would
“ do as he desired her, Mr. Isaacson would
“ give her a handsome reward when he re-
“ covered—that the medicine he wished
“ her to administer was a bottle of double
“ rum, of which she was to give him a glass-
“ ful, with fifty drops of laudanum in it, the
“ first night ; and another glassful, with one
“ hundred drops of laudanum in it, the second
“ night, if the first dose should have a good
“ effect. To this proposal she answered,
“ that if such medicines were administered
“ to Mr. Isaacson in the state in which he
“ then was, he would not recover to reward
“ either her or Mr. Jones. To which he
“ replied, that she was a damned fool for
“ refusing, and that he would give her two
“ guineas out of his own pocket if she would
“ do it. She said, that if the best graduate
“ in Edinburgh would give her her apron
“ full of gold, she would not.” This woman
deposed moreover that one evening, while
she was employed apart, she heard Mr. Isaac-
son suddenly cry out, “ Good God, what is
“ this? It is laudanum! I am poisoned!”
She then observed Mr. Jones by the bedside

with a tea-cup, containing some liquor, in his hand, which he set down on the table, requesting the landlady to give it to Mr. Isaacson at a proper opportunity. The landlady asserts, that, late one evening, she saw Mr. Jones drop one hundred drops of laudanum into a tea-cup, and add some wine, which he immediately carried into Mr. Isaacson's room. She followed him: he endeavoured to make Mr. Isaacson, who was so far delirious that he did not appear to know Mr. Jones, swallow the contents; "on tasting the medicine, he
"spit it out of his mouth; cried out that it
"was laudanum, and that he was poisoned;
"but to the best of her observation, he did
"not swallow any of the medicine;" which, soon after, was thrown into the fire.

The interview, which the nurse herself vows, that she held with Dr. Brown at his house, may cast some suspicion on her integrity. But she might have been thoughtless; or, though determined to reject his suit, she might have been pleased with being solicited as arbiters between contending systems. The rest of the evidence is also consistent with her testimony.

Dr.

Dr. Duncan's indignation urged him to an immediate prosecution, which, as he was assured by some eminent advocates, would have terminated in the infliction of a severe punishment on the negociator. Dr. Monro discouraged this idea for reasons which it would be injurious not to quote; they are thus assigned in the letter to Dr. Jones: "He was principally averse to it on your account, because he considered you in the light of an imprudent young man—he imagined that the malpractices might be sufficiently proved of you, although they could not be brought home to Dr. Brown, whom he considered as the original aggressor. He was averse to it on account of Dr. Brown's wife and infant children, who might have suffered more severely by it than we could easily foresee. And besides this, he thought there was but little danger that Dr. Brown should repeat such practices, and still less chance that he would again find any student to be his assistant in the manner that you had been." In these reasons Dr. Duncan acquiesced.

By this intrigue Dr. Brown's "character was very near ruined as a physician, and as a man (*Enquiry*, p. 139)." All chance
of

of lucrative employment in his profession, if he ever had any, was destroyed. His character among his countrymen suffered irretrievably ; nor have I courage without better documents to undertake his vindication. Dr. Duncan assures me, that he knows of no reply to his letter ; and little satisfaction I apprehend will be found in the pleas offered by the *Enquirer* and *Philaethes*. If the means of erasing this blot remain, I hope they will be employed without delay. I shall be glad to have solicited, where I could not ascertain the truth. But “ the desire of rescuing a “ fellow-creature,” will never be admitted by the public as a justification of the clandestine interference of any man, much less of a physician, in the treatment of the sick. Such motives may be cheaply feigned ; and, when real, they may occasion endless mischief.

Things and persons are generally estimated in the gross ; and this unwelcome portion of my narrative, I fear, will raise in many minds a prejudice fatal to the credit of the following system. Just and judicious readers will, however, discriminate. And if, in the case of Bacon, the baseness of the magistrate detracts not from the wisdom of the philosopher,

philosopher, why should the imprudent or unjustifiable means which Brown adopted to carry his principles into practice, influence our opinion concerning the justness of those principles?

He sometimes discovered the propensity, so common among the framers of systems, in a less offensive way.

A student of medicine died of a low fever in spite of the full and avowed use of diffusible stimulants. The body was opened; several persons were present; among others the gentleman that informed me of the occurrence. During the examination of the appearances, Brown with an air of great sagacity remarked that the body was unusually fresh. The dissecting surgeon, whom perhaps kindred devotion to Bacchus had inspired with tenderness for the Doctor, replied that, considering the circumstances, he had scarce seen an instance where putrefaction had made such little progress. "Then, gentlemen," rejoined the doctor, "I appeal to you if we may not consider this as a clear proof of the propriety of our practice."

Brown

Brown was elected president of the Medical Society in 1776 and again in 1780. In what years he became a lecturer and graduate in medicine, I must leave to some future biographer to settle. Though he had attended the medical classes at Edinburgh ten or eleven sessions [Mr. WAIT], he resorted to St. Andrews for a Doctor's degree. His pupils, I believe, following in his train, strove to give to his passage the air of a triumphal progress; he was certainly accustomed to relate with infinite satisfaction the circumstances attending his graduation. He described the professors beyond the Firth as overawed by his fame and presence; it is likely enough that they wished to exchange their diploma for his money with as much expedition as possible.

For several years after 1780, and perhaps before, the professors, the physicians to the infirmary, and the societies were unceasingly annoyed by the adherents of Brown; the students' debates were carried to the highest pitch of violence; by the Medical Society a law was passed, and, I think, put in force, that if any member should challenge another for
any

any thing said in debate, he should incur the penalty of expulsion.

The efforts of the Brunonians to expose those practitioners, who followed a different system, are fully exemplified in a *Letter on the management of patients in the Royal Infirmary* (g). This letter was occasioned by a restriction annexed to the allowance of a very thin beef-stake to a patient in that hospital. It was expressly ordered that the stake should not exceed one inch and five sixteenths in length, nor seven eighths of an inch in breadth. This, at least, is the measure of the pattern (h). The tone, assumed in the commentary upon this text, is that of vehement invective: on the authority, as the writer says, "of one of your own students" he gives the following statement of the hospital diet:

"*The Common Fare.*

"*Soldiers pay 2s. 4d. per week.*

"Breakfast—One roll of bread and a measure of milk or
"beer.

"Dinner—One ditto, and a choppin of weak broth.

"Supper—The same as breakfast.

(g). Edinburgh, 1782, pp. 32. Signed *Veri Amicus*.

(h). Letter, p. 9.

Common

Common Patients.

“ Breakfast—Half a roll, and a measure of milk or beer.

“ Dinner—One roll, and a choppin of weak broth,

“ Supper—The same as breakfast.

“ In a few particular cases, a little meat is
 “ allowed and other necessaries, as may ap-
 “ pear proper to the physician.”

He then notices the roast beef and porter of St. George’s hospital in London, and subjoins this appeal: “ Let me figure the
 “ case that you, Doctor, were plunged at once
 “ into disease and beggary ; I put this plain
 “ question, whether would you choose to
 “ be lodged and nursed in St. George’s hos-
 “ pital, or to be deposited and starved in the
 “ Royal Infirmary, under such medical treat-
 “ ment as your own? Your victuals,” he proceeds, “ are not only scanty but bad.
 “ Your porridge is sometimes boiled almost
 “ into water-gruel ; your broth is commonly
 “ much better qualified to operate as an eme-
 “ tic than to nourish the system—of your
 “ milk we need only say that it resembles
 “ the rest which is sold in the streets of Edin-
 “ burgh. Your beer is not always tolerable
 “ even to the palate of an alehouse scullion,”

None

None undoubtedly but members of the medical profession, can have an adequate conception of the wide-wasting misery that daily arises from want of food, fuel and cloathing. Occasionally, in distressful seasons, the gnawing pains of hunger are assuaged by private charity ; and impending death or madness is prevented. But no effort is made to improve the predominant condition of the poor, though it is alike destitute of comfort and of hope. Experience teaches how little they have to expect from those POLITICAL SWINDLERS, who, under false pretences, acquire the power of sporting with the wealth and blood of nations. The wretchedness of imprisoned criminals remained unredressed only because it was indistinctly known ; the wretchedness of the indigent is not more clearly understood ; to expose it fully to the eyes of the community is a work of extensive beneficence reserved for some future HOWARD. When it is atchieved we shall be astonished at the proportion of human beings that languish in misery or perish prematurely ; the universal feelings of mankind will rise in behalf of these victims of penury ; and their flesh will

no longer be devoured by the luxurious creatures of corruption. But our Brunonian “friend to truth,” seems to work upon the compassion of his reader, merely for the purpose of degrading a few professors in the opinion of a set of students. If his letter contains material exaggerations, it could only serve to bring the cause of humanity into disrepute.

In 1782 I remember to have spent an evening in company with Dr. Brown. He assumed the sovereignty of the circle, which consisted principally of his disciples; and nobody thought of disputing his title; he displayed uncommon vigour of imagination, but to me the figures he called up were so little agreeable, that I never desired his conversation a second time. Others received entertainment; and by those who knew him well, he is remembered as “the best companion in the world.” His Doric dialect had nothing prepossessing to an English ear. It was so broad as to leave me often uncertain of what he said even in his lectures. And yet before he undertook the charge of a private tutor, he had attended an English master at Edinburgh, “for
“the

“ the purpose of acquiring a proper pronun-
“ ciation and method of teaching that lan-
“ guage, which he had not before had an op-
“ portunity of being improved in” [D. S.].
But the *vestigia ruris* were not to be effaced,
or else he had voluntarily resumed his original
notes.

Unprofitable adherence to the house of
STUART, had been relinquished at Oxford
before my entrance : and Brown was the first
person I ever saw absurd enough to profess
himself a Jacobite. He had several years since
embraced political sentiments thus repugnant
to those he once held, and which had now be-
come almost universally extinct. In 1770,
“ I was surprized,” says a gentleman who
had known him long, “ to find the Doctor
“ a warm admirer of the Scottish aristocracy :
“ the lairds of Clanronald, Keppoch, and
“ Gengary, were the theme of his eulogy ;
“ and prints of some of the chieftains who
“ had joined the late Pretender were placed
“ among the divinities of his household.”
No cause for such a revolution of opinion is
assigned. It did not arise by analogy from
his hostility to the professors, for it took
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place before his rupture with Dr. Cullen. This species of superstition easily fastens upon the mind of the antiquary ; and Brown had paid attention to the antiquities of his country. He was elected assistant Latin secretary to the Antiquarian Society of Edinburgh, without his sollicitation or knowledge, and from the sole consideration of his literature, according to the *Enquiry* ; but this assertion is contradicted by Dr. Duncan. His contradiction is founded on Mr. Cummyng's declaration when he proposed Brown, that " he knew him to be very desirous of obtaining the appointment."

His conversation was full of contempt for the literature, talents, and doctrines of the medical professors, one great natural philosopher excepted. He continually criminated them as his persecutors, and as unjust towards those students who adopted his principles. This injustice is said to have appeared in unusual severity on the examinations previous to *graduation*. In the *Enquiry* these complaints are repeated ; and to shew how much the right of private judgment was infringed in the article of inaugural dissertations,

tions, the following correspondence is produced: the candidate, it should be premised, was desirous of quoting the sixty-ninth, seventieth, and seventy-first paragraphs from the *Elementa Medicinæ* in a thesis on epilepsy.

“SIR,

“A former experience of your civility
“prevents my apologizing for troubling you
“on the following occasion, viz.

“From a strict perusal and attention to
“my dissertation, I find it necessary to solicit
“your approbation of inserting the quotation I made from Dr. Brown’s printed
“book, to which you formerly objected.

“Amongst many other reasons, I will
“submit the two following to your consideration.

“1. That without it I am prevented from
“saying what I *really believe*, to the manifest
“injury of my dissertation.

“2. That I am deprived of the liberty
“other candidates have always enjoyed in
“making quotations from any author; a
“privilege too, which was *promised me by*
“*Dr. Gregory.*

“As I wish to have my dissertation printed

*lxxxiv ON THE CHARACTER

“ immediately, your answer as soon as con-
“ venient, would oblige

“ Your humble Servant,

“ J. WAINMAN.”

The answer was as follows :

“ SIR,

“ I objected to your quotation, as I have
“ often done to quotations made by other
“ candidates, not that it contained the opinion
“ of *this doctor*, or of *that professor*; but
“ that it contained such jargon, as could not
“ fail to disgrace the candidate, and of course
“ the university, which gave sanction to its
“ publication. As to the liberty you say,
“ ‘ candidates always enjoyed of making
“ quotations from any author, right or
“ wrong,’ I never heard of it before, and *am*
“ *determined* to give it *no quarter*, neither
“ now nor hereafter.”

(Signed.) ALEXANDER MONRO.

I must profess myself incapable of enter-
ing into these sentiments: and I suppose
many readers will concur with me in regard-
ing with contempt the *patch-work* of educa-
tion; whether it consist of a specimen of
penmanship,

penmanship, retouched by the master for the honour of the school, or an *inaugural specimen*, garbled by the professors for the honour of the University.

Observing the students of medicine frequently to seek initiation into the mysteries of free-masonry, the author of the *New Doctrine* thought their youthful curiosity afforded him a chance of proselytes. In 1784 he instituted a meeting of that fraternity, and entitled it, *The Lodge of the Roman Eagle*. The business was conducted in the Latin language, “ which he spoke with the same “ fluency and animation as he spoke Scotch. “ I was much diverted,” adds Dr. Macdonald, “ by his ingenuity in turning into “ Latin all the terms used in masonry.”

In unfolding his system it was his practice first to translate the text book, sentence by sentence ; and then to expatiate upon the passage. For most of his pupils the translation was a preliminary highly necessary ; and he must have considered it as politic to combine literary with scientific instruction. The prospect of this double advantage, might perhaps, from time to time, bring him a few additional hearers ; but whatever was the absolute or

f 3

comparative

comparative merit of the theory he taught, his seats, I fear, were seldom crowded.

The introductory lecture, if my memory is accurate, was intended to impress upon his audience a sense of the importance of the lecturer's discoveries; its effect was rather to render him ridiculous. The dread of pain and death easily persuade us that improvements in medicine are more beneficial than in any other art; but when a man asserts the superior utility of his discoveries to those of Newton, he will with difficulty avoid the appearance of asserting the superiority of his talents. The lecturer, in his cooler moments, would have been sensible that lofty claims produce only laughter or resistance. But his imagination easily kindled; he was thrown off his guard, and he strongly expressed what he fervently believed. He usually proceeded to open his system with animation; but he did not always persevere with the same spirit. He was apt, as he advanced, to fail in punctuality of attendance. As the master's ardour abated, slackness stole upon the pupils; so that his courses not very unfrequently, I believe, shared the fate of Butler's story of the bear and

and fiddle. The numerous inaccuracies with which, in spite of the remonstrances of his well-wishers, he suffered both editions of his *Elements* to pass through the press evince his negligence in those concerns which might be supposed to lie nearest his heart.

His voice was in general hoarse and almost croaking, but “when he became animated, “he had fine cadences and pleasing tones, “which took off all the uncouthness of his “accent and his manner.”

One of his pupils informs me that when he found himself languid, he sometimes placed a bottle of whisky in one hand, and a phial of laudanum on the other ; and that, before he began his lecture, he would take forty or fifty drops of laudanum in a glass of whisky ; repeating the dose four or five times during the lecture. Between the effects of these stimulants and voluntary exertion, he soon waxed warm, and by degrees his imagination was exalted into phrenzy.

The subjoined quotation shews that he sometimes endeavoured to enforce his tenets in a manner not very usual ; conceiving it lay in his power to remove certain objections

deducible “ from the real or imagined in-
 “ inflammation of the brain at the end of Ty-
 “ phus,” and “ from the inflammatory part
 “ of the gout,” he called together a party of
 his confidential pupils.

“ He had brought on a slight fit of the gout
 “ by unusual exercise in walking. This was
 “ an opportunity for making an experiment
 “ which was to decide the whole controversy.
 “ A person called for him before dinner,
 “ who was in a way of business that led him
 “ to drink in the morning ; he expected a
 “ glass from him and was gratified. The
 “ Doctor for a reason that the reader must
 “ perceive, collected half a dozen of his prin-
 “ cipal pupils to dinner, and drank then till
 “ he only, in consequence of what he had
 “ taken before, was considerably affected.
 “ He told them he had planned some degree
 “ of intoxication in order to explain many
 “ inflammations, which were universally un-
 “ derstood to be accompanied with, or to de-
 “ pend upon, phlogistic diathesis. Before
 “ the application of the stimulus we speak
 “ of, he had not been able to put his inflamed
 “ foot to the ground, but had supported
 “ himself

“himself in any little motion that he chose
 “to make through the house, by his sound
 “extremity, assisted by the use of his staff;
 “but before he dismissed his company, he
 “recovered the perfect use of his affected
 “leg (k).”

A few words will describe the tenor of this unfortunate man's life, till his removal from Scotland. He was so reduced in his circumstances as to be committed to prison for debt, where his pupils attended his lectures. In the abuse of intoxicating liquors he observed no moderation. In 1775 Mr. Wait found him drinking water only. His situation, about that time, would have roused almost any man to a struggle with this destructive habit. His preface discloses the reason of his sobriety. Finding the gout return with severity, after some perseverance in this experiment of abstemiousness, he returned to the bottle, and never afterwards relinquished it.

His prospect of maintaining himself by teaching medicine at Edinburgh becoming every year worse; he at length carried into

(k) Enquiry, p. 134.

execution a design which he had long meditated, and to which he had received some encouragement. In 1786, therefore, he embarked for London, bearing in mind most probably, if he did not utter, Scipio's exclamation against the ingratitude of his country. Immediately on his arrival, an incident befel him which I have heard Mr. Murray, the bookseller of Fleet-street, relate in proof of his simplicity. The peculiarity of his appearance, as he moved along—a short square figure with an air of dignity, in a black suit which heightened the scarlet of his cheeks and nose—fixed the attention of some *gentlemen* in the street. They addressed him in the dialect of his country; his heart, heavy as it must have been from the precariousness of his situation, and distance from his accustomed haunts, expanded at these agreeable sounds. A conversation ensued, and the parties, by common consent, adjourned to a tavern. Here the stranger was kindly welcomed to town; and after the glass had circulated for a time, something was proposed by way of sober amusement—a game at cards, or whatever the Doctor might prefer. The
Doctor

Doctor had been too civilly treated to demur, but his purse was scantily furnished, and it was necessary to quit his new friends in search of a supply. Mr. Murray was the person to whom he had recourse; the reader will not wonder that his interference should have spoiled the adventure.

A London sharper of another denomination afterwards tried to make advantage by the Doctor. This was an ingenious speculator in *public* medicines. He thought a composition of the most powerful stimulants might have a run, under the title of Dr. BROWN'S *exciting pill*; and for the privilege of his name offered him a sum in hand by no means contemptible, as well as a share of the contingent profits. Poor Brown, needy as he was, spurned at the proposal.

It is easy to anticipate the remainder of my tale. Change of residence wrought no change of conduct. Some of his friends were disgusted by those habits which repetition had unalterably fixed. In dictating Brown's resolutions, pride had always its share: Cullen, who never mentioned his abilities without praise, used to add, that his temper rendered it

it difficult to deal with him. At the present period I have been told, and I can easily believe, that he was more impracticable than ever. He spoke in sanguine terms of the probability that his system would become at length triumphant; but whatever he said or imagined, he effected little. He attempted to open, but never, I understand, completed a course of lectures in London. In 1787 he published, without his name, those "Observations," from which I have already borrowed a passage. He could not in reason expect to find a cordial welcome among his brethren in England. Public opinion can alone awe the body of established physicians in any country into toleration of innovators; and knowledge on this subject was too little diffused for public opinion to operate with effect in his favour. These "Observations" were therefore properly intended for general perusal; but the author was extremely defective in the talent of rendering science popular. Nor was he patient or rich enough to wait for the beneficial consequences that might have resulted, if he could have rendered his doctrine a subject of universal curiosity.

He

He persisted in his old irregularities for some time, meditating great designs, with expectations not less ardent than if the spring of life, in all its bloom of hope, had been opening before him. At length, on the seventh of October, 1788, when he was about fifty-two years of age, he was seized with a fatal fit of apoplexy. He died, if I am not misinformed, in the night, having swallowed as he went to bed a very large dose of laudanum; a species of dram to which he had, indeed, been long addicted. He was at this time about to begin a course of lectures. I am assured by one who had seen him the evening preceding his death, that his appearance did not betray any tokens of distress; nor was it apparent that his constitution had run much into decay since his departure from Scotland.

When Cullen, two years afterwards, died in embarrassed circumstances, his friends obtained public aid for his family. Brown's destitute widow and children were saved from distress by private beneficence; but it cannot be expected that the contributions, raised
for

for that purpose, should have proved sufficient for their permanent support.

Dr. Brown's family has been already mentioned as numerous : he left two sons and four daughters. His eldest son is now studying medicine at Edinburgh, where he has experienced great liberality from the professors and the societies of students. His talents will, I hope, meet with a more adequate compensation than those of his unfortunate father.

In the recital of this scanty information, my own sentiments have fluctuated so much that I am doubtful whether I have preserved impartiality, or shall appear consistent in the distribution of pity, ridicule, censure, and applause, among the incidents of Brown's life. Yet the peculiarities by which he was distinguished, appear obvious enough. He was endowed with uncommon susceptibility to impressions. By whatever object they were touched, the springs of his nature bent deeply inwards ; but they immediately rebounded with equal energy. This quality is the foundation of all moral and intellectual superiority ; but, unhappily, the
strong

strong feelings and bold resolutions of Brown were not improved into steady principles. He never seems to have taken pains to form a system of conduct advantageous to himself, and just towards others. As soon as he lost the controul of superstition, his high spirits hurried him into the most intemperate excesses ; and, at a later period, his actions can only be regarded as the plunges of despair.—The tenderness with which his cordiality inspired those who knew him formerly, I could demonstrate by a variety of testimonies. By a writer already quoted, he is styled “a man “of infinite goodness of heart (*n*).” Dr. S—— concludes his communication with these expressions : “He was possessed of a “great mind that supported him in the midst “of all his distresses. He despised riches ; “detested every thing base, and possessed such “openness of heart as to be liable to be “taken in by every knave.”—He undoubtedly committed an error, which has often been productive of fatal consequences to persons accustomed to scientific speculation. He gave

(*n*) Analyt. Rev. See above.

mankind credit for a more sincere regard for truth, and an higher sense of its importance, than they have entertained in any age. He imagined, perhaps, that Plato's fally concerning Virtue was applicable to Science. He therefore utterly neglected those arts by which the imagination is captivated; and trusting to their intrinsic value, bluntly challenged acceptance for his opinions.

Cicero and Bacon were his favourite authors; in his elaborate compositions he imitated the Roman orator with affectation; and it must be confessed, that by taking advantage of the penury and want of precision, which Lucretius and Cicero so loudly lament, he has succeeded to his utmost wishes in constructing a style of classical obscurity. He could, however, write otherwise, and unite at will perspicuity with purity. This may be ascertained by examining the dissertations, which he furnished, at least, with their Latin garb. Several are preserved in a well-known collection (o);

(o) See Thesaurus Medicus, iii. and iv. Edinburgh, 1785.

but

but for an obvious reason I must leave it to the curious reader to discover, by private enquiry, which were composed by Brown.

Bacon he admired not only for his masterly survey of universal science, but likewise, as Dr. Macdonnel acutely conjectures, because that great author appeared to countenance him in the disrespect with which he treated his predecessors.—He had little medical erudition. At first he probably read more than ordinary students; but after he had constructed his theory, he seldom perused or consulted any medical author. He was impatient when any difficulty was started which he did not see clearly how to solve (*p*): nor would he ever acknowledge any exception to his principles. An argument against his fundamental propositions, which I had mentioned in conversation to a favourite pupil, was communicated one evening, to the master in my presence, a little before the hour of lecture. He said little in reply at the moment. But it appeared that the objection worked upon his mind; in the course of his

(*p*) Dr. Macdonnel,

lecture he waxed unexpectedly warm; and at last, addressed himself particularly to the pupil who had stated the objection. He did not attempt to expose its futility, as might easily have been done; but, exhorting him to suffer no insinuations to divert his attention from the *doctrine*, he proceeded to deliver against the exercise of the understanding, a dissuasive that might have done credit to the pulpit.

The Observations, and the Elements of Medicine, are all the productions which he avowed. But there prevailed a suspicion, and it has been publickly mentioned (*q*), that he was the author of the Enquiry, published in the name of Dr. Jones. By his most confidential disciples I have been assured, that they never heard him drop an hint of having assisted in its composition. In manner it certainly bears a strong resemblance to the "Observations;" there are, besides, as the reader may observe in my quotations, forms of expression peculiar to Scotland; but the professed author may be said to have derived the one from his preceptor, and the other

(*q*) Dr. Duncan's Letter, p. 25.

from the country in which he resided.—This book, we are told, was composed as speedily as it could have been transcribed by an ordinary hand. It is unquestionably ill arranged, tedious, uncouth, arrogant, and illiberal; yet it contains passages presenting juster views of medicine than I remember to have elsewhere seen, and conceived in the genuine spirit of Bacon.

He designed a Latin elementary treatise of morality on philosophical principles (*r*)—*Elementa Morum*; but he never, perhaps, committed any portion of such a work to paper. We may fairly presume that it would have been original, luminous, and profound. And since no man, not deeply skilled in such knowledge, as physicians should possess, will ever trace back human actions and passions, along their winding course, to the fountain head, the failure of Brown's design may be regretted as an heavy loss to literature.

Having received a little additional information, too late for insertion in the proper place, I annex it here. To Mr. Wait's account

(*r*) Dr. Macdonnel.

of his quickness in mastering languages, it may be added, “ that Brown displayed a genius “ for literature far superior to any scholar that “ had ever been under the care of Mr. Cruik- “ shanks. In the course of two years, he “ could read all the Latin classics with the “ utmost facility; in the Greek language, he “ made the same remarkable proficiency.” This intelligence comes from Dr. S——, who likewise mentions the astonishing power of his memory, and adds, that he first went to Dunse school in 1751, when he must have been above fourteen years of age. The fact is remarkable, as he does not appear to have been before instructed in the rudiments of the learned languages. The same gentleman confirms my account of the motives of his strenuous application. “ The leading members “ of the seceding congregation at Duns, to “ which his parents belonged, were struck “ with the proofs of capacity he manifested at “ the country-school, where he learned reading and writing; they encouraged him to “ go to the grammar-school, that he might “ be afterwards educated as one of their “ ministers, expecting he would greatly con- “ tribute

“tribute to the promotion of their particular
“interest.”——

I have pleasure in recording that, by advice of the friend who brought him the first thesis to translate, he addressed a Latin letter, to the late excellent Alexander Monro, then professor of anatomy at Edinburgh, requesting gratuitous admission to his lectures. Having succeeded in this instance, he applied in the same manner to the other medical professors.——

His intercourse with Cullen forms the most curious part of Brown's history. The following memorandum includes his reasons for dissatisfaction with his patron, as they were assigned soon after the separation to a person who acknowledged his talents, without being a partizan in his disputes, or a follower of his doctrines.—“They lived upon the strictest
“intimacy for many years; and Brown could
“call for a bottle of wine in Cullen's house,
“when he pleased. During all that time no
“man in Brown's company could contradict
“any of Cullen's opinions without danger of
“offending him. After the quarrel, he said
“Cullen had promised him his interest for

“ the first vacant chair in the college ; but
“ when the late Dr. Gregory died, instead of
“ using his interest in Brown’s favour, he did
“ the reverse—that, to try him further, Brown
“ petitioned for admission into the philoso-
“ phical society, but was rejected through
“ Cullen’s means.” Here only one side of
the question is shewn: and the representation
comes from a man of impetuous passions,
who, to obtain our full confidence, should
either have been less violent in defending or
in opposing Cullen.—Complaints of disap-
pointed expectations are still more common
in the intercourse of patronage, than of faith-
less vows in that of gallantry ; this happens,
I suppose, because offers and promises are ex-
tracted from *harmless* expressions, by which
persons who amuse themselves with gallantry
and patronage, do not *intend* to convey any
particular meaning.

OF Dr. BROWN'S PRIVATE PRACTICE.

TO some readers it may appear strange that I should have finished the life of a physician, who caused so great an uproar in the medical world, without more particular notice of his private practice. I enquired with some solicitude, but in vain, whether during the long period of his studies he was peculiarly observant of diseases. One circumstance I have lately learned; and it will surprize those who believe him to have inculcated contempt for the sciences auxiliary to medicine: my authority however is unquestionable. The season before he became an independent lecturer, he was industrious to acquire more minute anatomical knowledge than he had gained by attendance on the public lectures; and for some time attended a private instructor at five o'clock in the morning, and continued with him for two hours; botanical

information was added, on these occasions, to the anatomical. He had formerly been advised by Cullen to qualify himself for giving demonstrations in anatomy. Nothing could be imagined so entirely repugnant to his turn of mind ; no wonder, therefore, the advice was not followed.

Brown somewhere condescends to speak of his own " very large practice ;" but this is a compliment which every medical writer apparently thinks that usage justifies him in paying to himself.

I remember to have heard of an house at Edinburgh, which the Brunonians opened for the reception of poor patients ; probably they were not able to procure funds for its permanent support. The founder of the sect was, I believe, seldom consulted but in cases given up as hopeless ; and he was then apt to speak with imprudent confidence. According to Dr. S——, " his wish to ride in his " carriage would, in all probability, have " been gratified, had it not been prevented " by his sudden death afterwards in Lon- " don." If this surmise is founded upon any real tokens of approaching prosperity, I could wish

wish they had been assigned. For Brown went to London with no favourable omens; every extraneous circumstance was against him, and what else could avail him in a place, where it is well known to men of observation, that success has seldom been in proportion to merit? Dr. JOHNSON, who must have witnessed physician after physician carrying away the prize of public favour from competitors, far superior in particular skill and general abilities, declares that “in a great
“city medical reputation is, for the most
“part, totally casual.” “By an acute ob-
“server,” he subjoins, “who had looked on
“the transactions of the medical world for
“half a century, a very curious book might
“be written on the *fortune of physicians*.” The idea appears to me so happy that I shall venture to prosecute it through a few pages.

Such a book, with a due extension of the plan, would afford opportunities for displaying professional science, wit, knowledge of the world, and benevolence. For if it be true that many have been received in the name of the goddesses of health, who were, in reality, not the least active among the ministers of death,

death, the mistake deserves to be cleared up ; and a proper explanation would be better than “ curious ;” it would not only teach how some members of *the faculty* have contrived to retain a privilege which the priesthood has lost, but furnish I know not how much useful instruction besides.

OF REPUTATION IN PHYSIC.

On the most superficial enquiry, it would be manifest that *this* man prospered because he had been of a certain university ; *another*, merely because he belonged to a particular sect ; a *third*, because he happened to be in the way of procuring a recommendation to some leader in politics or fashion. A great number would be seen to have succeeded in life for the same reason precisely that Falstaff succeeds upon the stage. Few analyse their sensations, and the first impression made by these adventurers was pleasing. As far as the dramatic personage is concerned, the reason is unquestionable, but it by no means applies so happily to the other case. The qualities producing the happy impression, have, in truth, frequently borne no nearer
a relation

a relation to professional merit, than Falstaff's pleasantry to solid worth of character; in a variety of instances, they have been no other than symmetry of features or softness of address.

It is calamitous enough for individuals, labouring under disease, to fall into bad or indifferent hands; but when the caprice of fortune elevates her worthless favourites to the first eminence in so important a profession as medicine, a more extensive injury is done to society than we should at first imagine. To calculate its amount requires a great deal of thought. Beside the mischief they perpetrate with their own hands, these intruders occupy the station due (if the general welfare is to settle the precedence), to physicians of enlarged views, who would make a beneficial use of its advantages, and impel the defective art on towards perfection. Is an example necessary to enable you to conceive what might be effected by the powerful influence of medical men, enjoying the confidence of the great? A number may be given, but one will suffice; and it is the better for its simplicity. We have not observations from
which

which we can certainly deduce the difference, in point of efficacy, between certain warm medicinal springs and common water, heated to the same temperature. The problem, merely for its curiosity, deserves to be solved; and it happens to be peculiarly interesting to that order, from which doctors in vogue receive their amplest gratuities. They have shewn little anxiety for the removal of this difficulty, either for their own direction in practice, or by way of return to their benefactors.

They will too often, I fear, be found to have been worse than inattentive to the advancement of their art; and to have discouraged useful investigations by insinuation, if not by direct opposition. Pride and avarice will always combine to render a prosperous adventurer in medicine, whose views are narrow, jealous of improvements and hostile to improvers. The internal monitor whispers that it was not by knowledge he rose, but by knowledge he may sink. It is therefore the constant expedient of dullness to persuade the world that men of genius are deficient in judgment; though it be certain that the very persons who have been most remarkable for devising new means of relieving distress

distress and removing uncertainty, have also been the most acute in discerning the real relations of things. Still, however, *the old way* is judged *the safest*, and crafty mediocrity treasures up the spoils of the credulous and the rich.

It is possible to measure the number of degrees by which medicine is more imperfect than it would have been if the public was not so liable to misplace its confidence, and had not actually so often misplaced it. For this purpose, our enquirer, I apprehend, will find in the progress of a kindred art, a standard of easy application. Let it be supposed that a succession of men of specious carriage and mean talents had flourished for a century past, in the place of our great improvers of surgery. Then good part of their discoveries would have been lost, for we cannot believe that, under discouragement, and with inferior opportunities, Pott, Hunter, and their predecessors could have rendered equal services to humanity. Of these services a concise but clear account should be given; the same scrutiny should then be extended to the labours of the physicians that have flourished during the
same

*CX OF REPUTATION IN PHYSIC.

same period; it may begin with Radcliffe, and be carried down to our own times. Thus ordinary readers would be put in a condition to judge how far it betrays a spirit of wanton disparagement, to affirm that a physician in a great city, "is the mere plaything of fortune, they that employ him, not knowing his excellence, nor they that reject him, his deficiency (s);" these assertions, if they be well-founded, inevitably lead to a conclusion more important than satisfactory, for however we may be startled, we must infer *that the greatest repute in medicine affords scarce the slightest presumption of superior skilfulness.*

Of the fortunate sons of Esculapius, several have been wary enough not to expose themselves to criticism; in most cases, however, we have memorials sufficient to guide our judgment; some have left written documents of their powers; here the proportion between reputation and ability can be estimated with great precision.

Considering that his enquiry can be useful only by inculcating salutary circumspection,

(s) Johnson's Life of Akenfide.

our author should not be deterred by the first sentiments of repugnance which *the attack* would excite in many minds, nor by the respect due to his virtues, from examining the title of the celebrated Fothergill to present confidence, or posthumous reputation. He should insist the more on this decisive example, because Fothergill really appears to have done his best towards improving the art that enriched him; and because it would be difficult to prove that any among his equals in popularity, have performed, or could have performed greater things. How far he excelled in sagacity of discrimination, or fertility of resources, would be easily shewn by an impartial survey of his works; and little doubt would remain whether his patients would have sustained much disadvantage, or our present stock of information much diminution, if any well-meaning man of plain sense had moved in his sphere. If the smallest scruple should be left, there exists a piece of evidence which it may be the more difficult to resist, as it comes from the mouth of the worthy Doctor himself. Fothergill and others, have been heard by Dr. G. Fordyce,
“ to

“ to state in a serious harangue, their inspira-
 “ tion, not only in the knowledge of diseases
 “ without enquiring into their external ap-
 “ pearances, but in making prescriptions to
 “ flow from their pen, without any previous
 “ composition in their mind ; not in com-
 “ pliance with the prejudices of their patients,
 “ but from their own belief (t).”

From such a comparative estimate, the chief reason why surgery has so far distanced medicine, would appear. Should it be said that surgery must, from its nature, have outstripped medicine, as mechanical philosophy necessarily attained some degree of perfection before chemistry, the justness of the observation may be acknowledged. But after a liberal allowance for this cause of inequality, the author of the Investigation would find a far more powerful cause necessary to account for the whole effect.—He might corroborate his inference by an enumeration of the improvements actually made in medicine ; from which it would be evident that they have been principally owing to persons enjoying moderate reputation in the country.

(t) Fordyce on Fever, p. 160.

Objections will occur to hasty reasoners; and these the author must take care to obviate. “A physician of great eminence may be too busy to write; he may, also, be highly useful in his generation without leaving any traces of his skill behind.” He could not, however, well be more busy than several of the most eminent surgeons, who have found time to write extensive treatises; moreover, his practice and conversation, without the aid of his pen, would so widely spread the knowledge of his discoveries, that the patients of every village apothecary would have cause to bless the London luminary of physic.

The answer to these objections affords a criterion, by which we shall be as little liable to be deceived, as when we judge of the value of a fruit-tree by its produce. *If a physician has attained to great eminence without having made some assignable improvement in physic, if he has neither executed nor promoted any designs, tending to this end, he may be safely set down as the narrow-minded creature of artifice, or the spoiled child of chance.* In an age where every incident is brought

within reach of every eye, we may with perfect safety apply to personages so conspicuous the maxim of the schoolmen, that “ what does not appear, is to be reputed not to exist.”

The work in question doubtless requires courage as well as other valuable qualities; yet the author, if I do not mistake, would incur less danger at present than at any preceding period. The possessors of surreptitious or accidental fame, would infallibly join in crying or hunting him down, and by signs of alarm bear witness to the merit of the production. But I have reason to believe that the combination would fail in bringing it into total discredit. Some progress has been made in arranging the peculiar properties of animated nature, and in recommending to mankind the knowledge of themselves. A series of propositions, expressed in intelligible language, and capable of comparison with appearances, has been formed. These propositions, which occur principally in the writings of Dr. Brown, Mr. Hunter, and the author of *Zoonomia*, may be regarded as the foundation of a new science, not less generally interesting

interesting than any of the preceding: for it would be difficult to assign a reason why the celestial motions, the working of machines, or chymical phænomena, should be objects of liberal curiosity; to the exclusion of the effects produced by the principle of life. One reason, of which the force will not be easily eluded, may be assigned in behalf of the latter study. It directly tends to promote the well-being, and prolong the existence, of the student. The time therefore cannot be far distant, when instruction concerning the causes of health and disease will be acknowledged to form a necessary part of all rational education; and the nearer we approach to this period, with less hazard may the analysis proposed by Johnson, with the plan so enlarged, and the purpose so ennobled, be executed.

There is, still, an addition which, in my opinion, would contribute somewhat to precision, and somewhat to secure the sick against the danger of medical slaughter. This appendix I should call JATROLOGIA, a denomination from which the learned reader may infer, that I have in view some such application of the Linnæan method to Physi-

cians, as Baron Born has exemplified in his classification of Monks.

If those assemblages of human animals, that constitute political societies, were arranged according to the nature of their occupations, one class would consist of individuals, depending for their support upon opinion. This class, being provided with a name of Greek origin, might be easily split into orders; of these orders the medical tribe would make one. We have the order broken into genera ready to our hands: of the distribution into species (which is more difficult) a specimen is subjoined.—Our writer's present concern is only with the genus—*Doctor of Physic*. This genus we may subdivide into sections, or groups; as Linnæus sometimes manages with genera, comprehending a number of species.

S E C T. I.

DOCTORS *as desirous, at least, of doing good and extending knowledge, as of amassing wealth.*

1. *The philanthropic* DOCTOR, D. equally sensible of the importance and imperfection of medicine; compares the phænomena of health and disease with unwearied assiduity,
that

that he may form a just arrangement of the actions of life, persuaded that this is the only sure guide in medical practice; cautiously tries new remedies, and abides by the best; beats the coverts of science, that he may himself start something useful; is humane in his conduct, not so much from sudden impulses of the passion of pity, as from a settled conviction of the misery prevailing among mankind.

Var. α . *The shy philanth.* D. sick with disgust at the manœuvres of his intriguing brethren, runs into the opposite extreme, and keeps too closely retired from public notice.

Var. β . *The renegado phil.* D. possessing activity of mind and integrity of principles; relinquishes the practice of physic, partly for the same reason as Var. α . and partly from dissatisfaction with its helpless state; applies his talents to literature or science.

Obs. 1. Several of the greatest accessions to human knowledge are owing to this second variety.

Obs. 2. A careful examination and comparison of these two varieties, with some of the succeeding species, will elucidate the na-

ture of those physicians, that have usually had great *local* vogue.

More frequent than formerly—not apt to flourish in great cities—otherwise not confined to any particular situation. As self-love grows more enlightened, the more common will this sp. of D. become, till it supplants all the others: man being an animal less liable to be duped as his ignorance decreases.

S E C T. II.

D. *Mere collectors of fees, regardless of medical science, given to artifice and intrigue, each species after its own manner.*

3. *The bullying* DOCTOR, D.

— Inexorabilis, acer

looks big, struts, swaggers, swears.

Obs. Surgeons, in our times, more frequently bear these marks. According to a most acute contemporary author, the famous RADCLIFFE was a compleat specimen of the bullying D. “With small skill in physic, “and hardly any learning, he got into practice by vile arts.—He would neglect a “nobleman that gave exorbitant fees;” and to heighten the insult by contrast “at the “same

“ same time carefully attend a servant or
“ mean person for nothing—he was surly
“ and morose; treated his patients like dogs
“ —extended his insolence even to the Royal
“ Family—scorned to consult with his betters
“ on what emergency soever; looked down
with contempt on the most deserving of his
“ profession, and never would confer with any
“ physician who would not pay homage to
“ his superior genius; creep to his humour,
“ and never approach him but with the slavish
“ obsequiousness of a court flatterer.”

3. *The bacchanalian* DOCTOR. D. given to
fottishness, if not to drunkenness—generally
somewhat of the Bully.

4. *The solemn* DOCTOR. D. with garb,
voice, gestures, and equipage, contrived to
overawe weak imaginations, and hide the
futility of his art.

Obs. 1. D. of this remarkable species first
practised physic with pomp: they invented
or borrowed from the other professions those
barbarous habiliments, of which ridicule has
but lately stripped physicians. In times, when
an huge wig, or a flowing gown, could more
effectually command respect than sound mora-
h 4 lity,

lity, substantial justice, or useful skill, the stratagem succeeded to admiration.

Obs. 2. D. of this species, when a pretext offers, speak ostentatiously of their experience—never suspecting any of their hearers may know that there are understandings which multiplicity of appearances serves but to confound.

5. *The club-hunting* DOCTOR. D. frequenting the crowded haunts of men; pushing himself forward, saluting all he knows, and all who will know him; talking much and loud.

Obs. In England, D. of this species have of late been frequently seen in paroxysms of frantic loyalty, and of *civisme* in France.

6. *The burr* DOCTOR. D. fastening himself upon you as tenaciously as the heads of the noisome weed (*centaurea calcitrapa*), from which the trivial name of the sp. is taken, fix upon your cloaths.

Obs. Nothing in art, but the juggler's address in making you take what card he pleases out of a pack, equals the dexterity with which D. of this sp. force themselves on patients.

7. *The*

7. *The wheedling* DOCTOR. D. with an everlasting smirk upon his countenance—frequent at the polite end of large cities, and at places of fashionable resort.

Var. α . *The Adonis wheedling* D. D. with an handsome face, joined to the wily address, characteristic of the sp.—flourishes at watering places; sometimes joins to his profession the trade of a fortune-hunter; and if he succeeds, “gives physic to the dogs.”

Obs. 1. D. of this sp. when most moderate, prescribe for every rich patient two draughts a day, and one night draught, beside pills and powders. Hence needlessly to swallow nauseous drenches may be numbered among the curses of wealth.

Obs. 2. *The Adonis* D. has sooner or later a patient of note, ill of a fever or some disease, that usually terminates favourably; in case of recovery the female busy-bodies of the place, exert their spirit of cabal in behalf of the wonder-working youth, and his fortune is made.

8. *The case-coining* DOCTOR. D. publishing forged or falsified cases.

Obs. “A very fertile source of false facts
“has been opened for some time past. This
“is,

“ is, in some young physicians, the vanity of
 “ being the authors of observations which are
 “ often too hastily made, *and sometimes, per-*
 “ *haps, very entirely dressed in the closet.* We
 “ dare not at present be more particular;
 “ but the next age will discern many instances
 “ of perhaps the direct falsehoods, and cer-
 “ tainly the many mistakes in fact, produced
 “ in the present age, concerning the virtues
 “ and powers of medicines.” CULLEN. *Mater.*
Med. I. 153.

A-kin to this flagitious abuse is the practice of purchasing false attestations, on oath, for advertisements; and what is still worse in effect, though not in intention; a custom beginning to prevail among persons of distinction—who cannot be supposed capable of discriminating diseases, or deciding on the efficacy of drugs—but who, nevertheless, permit Quacks to use their names in testimony of cures, which they *suppose* themselves to have witnessed.

9. *The good-sort-of-man* DOCTOR. D. a good sort of man, armed, by some mistake, with a diploma.

Var. α. *The gossiping good-sort-of-man* D. fetches and carries scandal.

Obs.

Obs. Varieties numerous as the hues of the chamæleon.

10. *The Sectarian* DOCTOR. D. dwelling among his own people at first; and by them often pushed on to spread devastation among the rest of mankind.

Obs. Varieties manifold; each distinguishable by the livery of its sect—one is too curious to be omitted.

Var. α. *The inspired Sect.* DOCTOR. D. believing himself to be inspired with the knowledge of diseases and remedies.

In civilized countries not much more frequent than witches. Among rude tribes, as among the Tartar hordes, a kindred variety is universally found. See Gmelin's Travels. But these seem rather to pretend to inspiration, than really to believe that their deity serves them in the capacity of Prompter: and they conjoin the characters of priest and conjurer with that of physician. I have not been able to ascertain whether our variety receives the afflatus, except in its medical capacity: and the miracles it has wrought in this, are not so perfectly authenticated, as to silence cavillers.

Obs.

Obs. People are now-a-days delicate in giving recommendations on some occasions ; but the best bred persons make no scruple of pressing a favourite physician or apothecary upon their acquaintance. Yet one would think that they are nearly as competent to speak to the merit of a footman, as of a prescriber or compounder of drugs. Sects sometimes improve this propensity into a regular system of cabal. The deeper the hypocrisy, or the wilder the enthusiasm of the Sect. Doctor, the more eagerly will his brother-fanatics dash through thick and thin to serve him. Now, as belief or disbelief in certain points of theology, has no apparent connection with skill in the administration of antimony, mercury, opium, and bark, we may deduce from this fact a rule which is probably as little liable to exception, as any that be laid down on the whole subject. *Never call in a physician, BECAUSE he is recommended by a person of the same Sect ; the more you are urged, be the more on your guard against the snare.* This rule extends to all dæmoniacs possessed by the corporation-spirit, and to all sets of persons remarkably gregarious.

Obs.

Observation.

Concerning this decad of doctors, there remains a caution to be laid down; and that it may make the greater impresson, I shall deliver it in the style of my models, the naturalists. *Notandum in toto hoc genere naturam mirabiles edere lusus.* It is indeed applicable to all the species; individuals being apt, like hybrid plants, or mule animals, to exhibit the marks of two species, wholly or in part.

OF THE BRUNONIAN DOCTRINE.

A complete investigation of Dr. Brown's theory of living nature, with its application to the knowledge and treatment of diseases, would, at least, equal the original work in size; besides, if I had any inclination to write such a commentary, I should not consider this as the proper place for introducing it. I have, however, a few words to say on the outlines and formation of the system. I shall subjoin some reflections to put medical students and readers, not professional, in the way of profiting by the true principles he promulgated without being misled by his doubtful or erroneous positions.

Of Dr. Brown's Fundamental Propositions.

The varied structure of organized beings it is the business of anatomy to explain. Consciousness, assisted by common observation, will distinguish animated from inanimate bodies with precision more than sufficient for all the ends of medicine. The cause of *gravitation* has been left unexplored by all prudent philosophers; and Brown, avoiding all useless disquisition concerning the cause of *vitality*, confines himself to the phenomena, which
this

this great moving principle in nature may be observed to produce. His most general propositions are easy of comprehension.

I. To every animated being is allotted a certain portion only of the quality or principle, on which the phænomena of life depend. This principle is denominated EXCITABILITY.

II. The excitability varies in different animals, and in the same animal at different times. As it is more intense, the animal is more vivacious or more susceptible of the action of *exciting* powers.

III. Exciting powers may be referred to two classes. 1. External, as heat, food, wine, poisons, contagions, the blood, secreted fluids, and air. 2. Internal, as the functions of the body itself, muscular exertion, thinking, emotion and passion.

IV. *Life is a forced state*; if the exciting powers are withdrawn, death ensues as certainly as when the excitability is gone.

V. The *excitement* may be too great, too small, or in just measure.

VI. By too great excitement weakness is induced, because the excitability become defective; this is *indirect debility*: when the exciting powers

*CXXVIII OF THE BRUNONIAN DOCTRINE.

powers or stimulants are withheld, weakness is induced ; and this is *direct debility*. Here the excitability is in excess.

VII. Every power that acts on the living frame, is stimulant, or produces excitement by expending excitability. Thus, although a person, accustomed to animal food, may grow weak if he lives upon vegetables, still the vegetable diet can only be considered as producing an effect, the same in kind with animals, though inferior in degree. Whatever powers therefore, we imagine, and however they vary from such as are habitually applied to produce due excitement, they can only weaken the system by urging it into too much motion, or suffering it to sink into languor.

VIII. Excitability is seated in the medullary portion of the nerves, and in the muscles. As soon as it is any where affected, it is immediately affected every where ; nor is the excitement ever increased in a part, while it is generally diminished in the system ; in other words, different parts can never be in opposite states of excitement.

I have already spoken of an illustration, drawn up by Mr. Christie from a familiar operation,

ration, to facilitate the conception of Brown's fundamental positions. I introduce it here as more likely to answer its purpose than if separately placed at the end of my preliminary observations.

“ Suppose a fire to be
 “ made in a grate, filled with a kind of fuel
 “ not very combustible, and which could
 “ only be kept burning, by means of a ma-
 “ chine containing several tubes, placed be-
 “ fore it, and constantly pouring streams of
 “ air into it. Suppose also a pipe to be fixed
 “ in the back of the chimney, through which
 “ a constant supply of fresh fuel was gra-
 “ dually let down into the grate, to repair
 “ the waste occasioned by the flame, kept up
 “ by the air machine.”

“ The *grate* will represent the human frame ; the *fuel* in it, the *matter of life*, the
 “ *excitability* of Dr. Brown and the *sensorial*
 “ *power* of Dr. Darwin ; the *tube* behind
 “ supplying fresh fuel, will denote the power
 “ of all living systems constantly to regenerate
 “ or reproduce excitability ; while the *air*
 “ *machine*, of several tubes, denotes the va-
 “ rious *stimuli* applied to the excitability of
 “ the body ; and the *flame* drawn forth in
 Vol. I. i “ consequence

“ consequence of that application represents
“ *life*, the product of the exciting powers
“ acting upon the excitability.”

“ As Dr. Brown has defined *life* to be “ a
“ *forced state*,” it is fitly represented by a
“ flame, *forcibly* drawn forth, from fuel little
“ disposed to combustion, by the constant
“ application of streams of air poured into it
“ from the different tubes of a machine. If
“ some of these tubes are supposed to convey
“ *pure* or dephlogisticated air, they will de-
“ note the highest class of exciting powers,
“ opium, musk, camphor, spirits, wine, to-
“ bacco, &c. the diffusible stimuli of Dr.
“ Brown, which bring forth for a time a
“ greater quantity of life than usual, as the
“ blowing in of pure air into a fire will tem-
“ porarily draw forth an uncommon quantity
“ of flame. If others of the tubes be sup-
“ posed to convey common or atmospheric
“ air, they will represent the ordinary ex-
“ citing powers, or stimuli, applied to the
“ human frame, such as heat, light, air,
“ food, drink, &c. while such as convey im-
“ pure and inflammable air may be used to
“ denote what have formerly been termed
“ sedative

“ sedative powers, such as poisons, conta-
 “ gious miasmata, foul air, &c.”

“ The reader will now probably be at no
 “ loss to understand the seeming paradox of
 “ the Brunonian system ; that food, drink,
 “ and all the powers applied to the body,
 “ though they support life, yet consume it ;
 “ for he will see, that the application of these
 “ powers, though it brings forth *life*, yet at
 “ the same time it wastes the excitability or
 “ *matter of life*, just as the air blown into the
 “ fire brings forth more *flame*, but wastes the
 “ *fuel* or *matter of fire*. This is conformable
 “ to the common saying, “ the more a spark
 “ is blown, the brighter it burns, and the
 “ sooner it is spent.” A Roman poet has
 “ given us, without intending it, an excellent
 “ illustration of the Brunonian system, when
 “ he says,

“ Balnea, Vina, Venus, consumunt corpora nostra,

“ Sed Vitam faciunt Balnea Vina Venus.”

“ Wine, warmth, and love our vigour drain ;

“ Yet wine, warmth, love, our life sustain.”

Or to translate it more literally,

“ Baths, women, wine, exhaust our frame,

“ But life itself is drawn from them.”

“ Equally easy will it be to illustrate the
“ two kinds of *debility*, termed *direct* and *in-*
“ *direct*, which, according to Brown, are the
“ cause of all diseases. If the quantity of
“ stimulus, or exciting power, is propor-
“ tioned to the quantity of excitability, that
“ is, if no more excitement is drawn forth
“ than is equal to the quantity of excitabil-
“ ity produced, the human frame will be in a
“ state of health, just as the fire will be in a
“ vigorous state, when no more air is blown
“ in, than is sufficient to consume the fresh
“ supply of fuel constantly poured down by
“ the tube behind. If a sufficient quantity
“ of stimulus is not applied, or air not blown
“ in, the excitability in the man, and the fuel
“ in the fire will accumulate, producing *direct*
“ *debility*, for the man will become *weak*, and
“ the fire *low*. Carried to a certain degree
“ they will occasion death to the first, and
“ extinction to the last. If again, an over
“ proportion of stimulus be applied, or too
“ much air blown in, the excitability will
“ soon be wasted, and the matter of fuel al-
“ most spent. Hence will arise *indirect de-*
“ *bility*, producing the same weakness in the
“ man,

“ man, and lowness in the fire as before, and
 “ equally terminating, when carried to a
 “ certain degree, in death and extinction.”

“ As all the diseases of the body, accord-
 “ ing to Dr. Brown, are occasioned by direct
 “ or indirect debility, in consequence of too
 “ much or too little stimuli, so all the defects
 “ of the fire must arise from direct or in-
 “ direct lowness, in consequence of too much
 “ or too little air blown into it. As Brown
 “ taught that one debility was never to be
 “ cured by another, but both by the more
 “ judicious application of stimuli, so will be
 “ found the case in treating the defects of
 “ the fire. If the fire has become low, or
 “ the man weak by the want of the needful
 “ quantity of stimulus, more must be ap-
 “ plied, but very gently at first, and increased
 “ by degrees, lest a strong stimulus applied to
 “ the accumulated excitability should pro-
 “ duce death, as in the case of a limb be-
 “ numbed by cold (that is weakened by the
 “ accumulation of its excitability in conse-
 “ quence of the abstraction of the usual
 “ stimulus of heat), and suddenly held to the
 “ fire, which we know from experience is in

“ danger of mortification, or as in the case
 “ of the fire become very low by the accu-
 “ mulation of the matter of fuel, when the
 feeble flame, assailed by a sudden and
 “ strong blast of air, would be overpowered
 “ and put out, instead of being nourished and
 “ increased. Again, if the man or the fire
 “ have been rendered *indirectly* weak, by the
 “ application of too much stimulus, we are
 “ not suddenly to withdraw the whole, or
 “ even a great quantity of the exciting powers
 “ or air, for then the weakened life and di-
 “ minished flame might sink entirely, but
 “ we are by little and little to diminish the
 “ overplus of stimulus, so as to enable the
 “ excitability, or matter of fuel, gradually to
 “ recover its proper proportion. Thus a
 “ man who has injured his constitution by
 “ the abuse of spirituous liquors, is not sud-
 “ denly to be reduced to water alone, as is the
 “ practice of some physicians, but he is to be
 “ treated, as the judicious Dr. Pitcairn of
 “ Edinburgh, is said to have treated a High-
 “ land chieftain, who applied to him for ad-
 “ vice in this situation. The Doctor gave
 “ him no medicines, and only exacted a pro-
 “ mise

“ mise of him, that he would every day put
“ in as much wax into the wooden *queich* out
“ of which he drank his whisky, as would
“ receive the impresson of his arms. The
“ wax thus gradually accumulating, di-
“ minished daily the quantity of the whisky,
“ till the whole *queich* was filled with wax,
“ and the chieftain was thus gradually, and
“ without injury to his constitution, cured
“ of the habit of drinking spirits.”

“ These analogies might be pursued far-
“ ther ; but my object is solely to furnish
“ some general ideas, to prepare the reader
“ for entering more easily into the Brunonian
“ theory, which I think he will be enabled
“ to do after perusing what I have said. The
“ great excellence of that theory, as applied
“ not only to the practice of physic, but to
“ the *general conduct of the health* is, that it
“ impresses on the mind a sense of the im-
“ propriety and danger of going from one
“ extreme to another. The human frame
“ is capable of enduring great varieties, if
“ time be given it, to accomodate itself to
“ different states. All the mischief is done
“ in the transition from one state to another.

*CXXXVI ILLUSTRATION OF THE

“ In a state of low excitement we are not rashly
“ to induce a state of high excitement, nor
“ when elevated to the latter, are we suddenly
“ to descend to the former, but step by step,
“ and as one who from the top of a high
“ tower descends to the ground. From
“ hasty and violent changes the human
“ frame always suffers, its particles are torn
“ asunder, its organs injured, the vital prin-
“ ciple impaired, and disease, often death,
“ is the inevitable consequence.”

“ I have only to add that though in this
“ illustration of the Brunonian System (writ-
“ ten several years ago), I have spoken of
“ a tube constantly pouring in fresh fuel, be-
“ cause I could not otherwise convey to the
“ reader a familiar idea, of the power posses-
“ sed by all living systems, to renew their
“ excitability when exhausted, yet it may
“ be proper to inform the student, that Dr.
“ Brown supposed every living system to
“ have received at the beginning its determi-
“ nate portion of excitability, and therefore,
“ although he spoke of the exhaustion, aug-
“ mentation, and even *renewal* of excitability,
“ I do

“ I do not think it was his intention to in-
 “ duce his pupils to think of it, as a kind of
 “ fluid *substance*, existing in the animal and
 “ subject to the law by which such substances
 “ are governed. According to him excita-
 “ bility was an unknown *somewhat*, subject
 “ to peculiar laws of its own, and whose
 “ different states we were obliged to describe
 “ (though inaccurately) by terms borrowed
 “ from the qualities of material substances.”

T. C.

IT was not unusual for Brown's disciples
 to disagree, when they were called upon for
 a strict interpretation of his principal tenets.
 If they be rigidly examined, they will be
 found, I think, not quite consistent with his
 own important doctrine of the accumulation
 of excitability, during different states of in-
 action. It appears to me, that according to
 his first chapters (xviii), living beings ought
 to have proceeded through languor to death
 in one unbroken tenour of wakefulness, and
 that all the images and lamentations which
 sleep has suggested to the poets, would have
 been lost. He who assumes that a certain
 portion

portion of excitability is originally assigned to every living system, by his very assumption, denies its continual production, subsequent diffusion, and expenditure at a rate equal to the supply, or greater or less. That the brain is an organ destined to secrete the matter of life, he could never have supposed, otherwise he would not have expressed a doubt whether excitability be a quality or a substance.

If we admit a successive supply of this principle, we may solve in a very easy manner, several difficulties, for the sake of which new epicycles must be added to Brown's system. In the cold bath we may imagine the generation of sensorial power, to proceed with small diminution, while the actions on the surface of the body are considerably abated by local subduction of heat. Thus the well-known glow will be the effect of undiminished production within, while external expenditure is diminished. But weak persons frequently do not experience any glow. Here the action on the skin affects the system universally; the production, therefore, is checked from the torpor of the discerning organ, and this
state

state of the brain explains the head-ach and chilliness, subsequent to the misuse of the cold bath. These effects are not, in my apprehension, easy to be reconciled to the hypothesis of a fixed original stock of excitability; the same thing may be said of seeds and eggs long preserved, without sensible change, in a state capable of germination and growth. Sleep sometimes produces no refreshment, and yet it seems not to be imperfect or disturbed in proportion to the languor felt on awaking. This I have attributed to a failure in the supply of excitability (*a.*); and nervous fever is imputed by another physiologist, to this cause of debility, of which Brown had no suspicion.—If an illustrative analogy be desired, his excitability might be compared to a fluid lodged in the body as a reservoir. According to the statement which I think more consonant to the phenomena, excitability would be like a fluid issuing from the brain as water from a spring. These resemblances might be traced a little way, but they soon fail, as always happens in matters so essentially dissimilar.

(*a.*). Observations on Calculus, &c.

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The hypothesis of Brown is happily adapted to the limited term of life ; according to the other supposition, we must conceive old age and death to depend upon a limited power of secretion in the brain. The difference is scarcely perceptible here, but in terms; it is, however, pleasing to suppose that wiser ages will be employed in the culture of the human species to which prolongation of life is essential : and we can more easily reconcile our thoughts to augmentation of power in a secreting organ, than of the original provision of excitability ; so that the doctrine, in other respects the more probable, seems more conformable to the prospect of improvement.

Of Brown's Application of his Principles.

The most negligent observer might bring specious objections against that uniformity of operation in stimulants, which is taught in the first propositions of the following elements : “ heat and wine, it might be said, can never act in the same manner, for no person is intoxicated by heat.” In the progress of his work we find the author relaxing, in some degree, the rigour of his principles.

ples. When the excitability is wasted by one stimulus, excitement, he says, may be produced by another; nor does it seem necessary, according to the examples quoted in the latter part of the thirty-first paragraph, and the subjoined note, that the second stimulus should be more powerful than the first. The succession in the note is, *food, thought, wine, food, punch, opium, punch, thought, and speech*; and this is not conformable to the ascending scale of stimuli, according to his estimate in other passages.

He also admits some modification of stimulant power, from the manner in which different stimuli are applied. Thus heat stimulates the surface more than the subjacent parts; and stimuli received into the stomach exert more action there than on any other part.

It is extraordinary that he should not have extended this inequality of operation to the constituent, as well as the integrant parts of the system. It was his principal fault, *naturam tanquam e præaltâ turri despicere*; hence his explanation of minute appearances, will often be found unsatisfactory.

The

The fourth and sixth chapter of Part II. afford several examples ; I shall select one :
“ Thirst and heat,” he observes, (CLIX.)
“ depend upon sthenic diathesis of the ex-
“ treme vessels of the fauces and skin. These
“ vessels become so much constricted as to
“ prevent the discharge of the perspirable
“ matter. Meanwhile the blood, flowing
“ near the extremities of the exhalant vessels,
“ lodges under the cuticle, the heat which is
“ generated in the system, and which would
“ be carried off, if the perspiration were
“ free.” He explains sthenic thirst from a
similar constriction of the vessels, which se-
crete saliva and mucus ; and in the small-pox,
the pustules are said to be occasioned by a
similar constriction, which detains the con-
tagious matter under the cuticle. This per-
manent constriction, we are told, is not
spasm ; no distinction, however, is attempted,
except by referring constriction to excess,
and spasm to defect, of excitement.

Upon this reasoning, it may be remarked,
1. That excessive excitement of vessels con-
sists in excessive oscillations—in the increase,
not in the suppression, of their healthy func-
tions ;

tions ; and 2. That to account for morbid alteration in the ordinary state of any discharge, we ought to look for an alteration in the action of those vessels, by whose counteracting powers it is regulated in health. The ballance in the perspiration depends on the cutaneous exhalants and absorbents ; but the properties of the lymphatic system seem never to have struck the imagination of Brown, though the investigation was carried on with so much ardour during the period of his studies ; attention to these anatomical discoveries would have assisted him in the full explanation of many diseases, which, though they pass under the same denomination, he has most justly classed as of a nature entirely opposite ; the one sthenic, the other asthenic ; but to make out this explanation, he must have acknowledged in these different vascular systems, some degree of inequality in the way in which they are affected by stimulants that operate on both. Thus if the power of absorption be sooner increased by the causes inducing the sthenic diathesis than that of exhalation, there is no occasion to imagine any constriction to account for
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the dryness of the skin and fauces. The consequent more speedy exhaustion of excitability in the absorbents, would likewise have suggested the rationale of that discharge that follows the state of dryness or *huskiness* of the skin, fauces, or urethra, of the trachea and its ramifications, when these parts are affected by inflammation.

A great part of the symptoms of Brown's *asthenic form of disease*, depend upon imperfect absorption from indirect debility of the vessels destined to that office; thus persons whose lungs have been weakened by inflammation after a meal expectorate mucus. In this case the food excites the whole system; the activity of the bronchial glands is increased, more mucus is secreted, and part becomes superfluous, on account of the comparative inactivity of the absorbents. *Quibus post inflammationem superest urethræ debilitas profluit mucus limpidus, postquam tensus fuerit penis.* The reason is the same.

Had it been once allowed by Brown that the different constituent parts of the body, bear a different relation to the same agents, he must have admitted the operation of specific

cific stimulants to an unlimited extent. This however, would have destroyed the universality of his principles, which he considered as the great beauty of his system; but his own opportunities of observation were probably too few, to force upon him a conviction of their insufficiency; it is easy to exceed equity and prudence in refusing to hearken to testimony, we may daily see speculative men forgetting that philosophy does not more consist in petulant rejection of information than in credulity.

Of the Formation of the Brunonian System.

It is believed that hints thrown out by Cullen, were the seed from which Brown raised his doctrines.

The connexion between the two men, is doubtless favourable to the supposition of a communication of ideas, and it is confirmed by the circumstantial evidence of a common term, from which the other terms, employed by Brown, might be constructed by an obvious analogy. The hints suggested by Cullen occur in the CXXXth, and some of the

following paragraphs of his *Institutions of Medicine*.

“ It is,” he says, “ probable that the
“ nervous fluid in the brain, is truly capable
“ of different states or degrees of mobility,
“ which we shall call its states of *excitement*
“ and *collapse*.” In his youth, this author
had imagined a mechanical hypothesis re-
specting the nervous fluid, which he regarded
with fondness through life, and unfolded
with great prolixity in the decline of his
powers (*b*). When he wrote the passage I
have quoted, his thoughts were turned from
the living body to an electrical machine; and
he evidently does no more than describe the
common experiment, in which a congeries
of flexible fibres is made to stand erect, and to
diverge by electricity, and then shrinks to-
gether on the application of a conducting
substance. His idea of excitement has there-
fore nothing in common with that of Brown;
and, on comparison, I am persuaded it will
appear that Brown was very little indebted to
the physiology of his master.

A material correction of the Brunonian

(*b*). See his *Materia Medica*.

theory.

theory, may be more safely ascribed to one of Mr. Hunter's discoveries, than its origin to these obscure opinions of Dr. Cullen. An intelligent writer, whose expressions bespeak personal observation, gives the following account of the extent and occasion of this correction. "In the first promulgation of his doctrines, Dr. Brown did not sufficiently distinguish between the actions of the living body and its powers.—*Excitement* and *strength* were at first considered by him as synonymous terms; and on the state of excitement, his distinction of diseases was entirely founded. To the last he had but two classes; diseases of increased and diminished excitement.

"After many discussions of his doctrine, in which the distinction between the powers and actions of the living body was pressed upon him, he adopted the term *excitability* to express the disposition to action, and to replace the terms *irritability*, *sensibility*, and *inability*, which he had discarded from his system (c)."

An alteration of some consequence respec-

(c). English Review for Oct. 1794, p. 282.

ting discharges of blood, which was made in the interval between two Latin editions of his elements, is noticed by the author himself. What corrections and enlargement are further required, the curious reader may determine by a careful comparison of the following system, with the kindred systems of two contemporary authors; constant reference being had to nature at the same time.

Of Predisposition to Disease.

Among a number of individuals equally exposed to any cause of disease, we constantly find some affected, and others escaping. The circumstances on which exemption and aptitude depend have been anxiously investigated; and if we were well acquainted with the powers that favour and resist morbid influences, we should be able more effectually to accomplish one of the two grand purposes of the medical art—the preservation of health. But although facts have been noted, the principle lies involved in total obscurity. Brown does not purposely elude the difficulty, but his principles lead him beside it; and we may doubt whether the term *predisposition* ought,

ought, in strict propriety, to have appeared in his Elements ; for predisposition is with him a slight disease, differing only in degree from that into which the person predisposed falls. (Chapter VIII. Part I.).

Between those actions of our different organs, and of the same organ which frequently occur together, or in succession, a bond of union is formed by habit, as in the case of our ideas. Of any two movements, therefore, if the former tend to introduce the succeeding, the second must take place, unless it be prevented by some interposing force. Hence it is manifest that robustness of constitution, principally consists in the strength of connection between the several members of the series, and proneness to disease in the facility with which the series may be broken. On this principle we may understand why brutes are more robust than the human species. Their actions both of body and mind are less diversified than ours ; and being in consequence more frequently repeated in the same order, they acquire greater force of union, or, as it has been lately termed, *strength of catenation*. It may deserve to be considered whether the

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remarkable exemption of negroes from the contagious fevers that have lately raged in America and the West Indies, and the comparatively small mortality among them depend on their uniform life (*d*).

Persons who have enjoyed uniformly good health, are said to be in greater danger when they become ill; and in cases where the opinion is just, we may deduce an explana-

(*d*). "Although the contagion seemed to vary much
 " in different descriptions of people, it is highly proba-
 " ble that the virus of the contagion itself was uniformly
 " the same, only variously modified by peculiar consti-
 " tutions, habits, or modes of living. Thus among
 " sailors, perhaps a scorbutic taint, joined to extreme
 " irregularity and imprudence, rendered the disease in-
 " finitely more fatal than among any other class of men.
 " On the other hand, among field-negroes, who cer-
 " tainly possess an idio-syncrasy peculiar to themselves,
 " and whose mode of living is generally temperate and
 " regular in a remarkable degree, the virus of the conta-
 " gion was so blunted as to act in the mildest form.
 " Why, however, it should operate with most violence
 " on Europeans just arrived, and who had never entered
 " the torrid zone before, is a singularity I do not pretend
 " to explain." Chisholm on the malignant pestilential
 fever which raged at Grenada in 1793, p. 130-1, one of
 the most fatal diseases on record.

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tion of the apparent paradox from the same principle ; for the disturbance of the functions betrays the intervention of a powerful cause.

Are not the embryos of organized beings placed in their peculiar receptacles, that they may be secure against violent impressions, till the movements of their organs, by repetition, come to proceed with a steady pace, and the animal machine is mounted ?

Pregnant and puerperal women are among the persons most liable to be affected by the slightest causes of disease. In the former, from the great change of the sanguiferous and glandular systems, new irritative and sensitive motions are perpetually introducing themselves ; and at the time of parturition, there is a sudden dissolution of all the newly formed associations ; at this critical period they require to be guarded with the nicest vigilance from all sudden changes of temperature, irregularities of diet, and exertions of body and mind.

In the transition from climate to climate, it is obvious that our habitual movements, especially those of the cutaneous vessels of all denominations, must be thrown into total confusion.

fusion. In this state of disordered action, there can be no power of association or connection to protect the system. It has also been universally observed, that contagious fevers are liable to make their attack after intoxication, when the whole internal man is tumult.

In the account of the Grenada fever, there is a scale to shew the gradation in which the natives of different countries, Africans, Americans, Creoles, and Europeans, assembled in that island, were liable to be infected and destroyed. This scale will serve as an illustration of the two last mentioned causes ; a thousand others are at hand.

“ It is curious,” says the writer, “ and
“ may be useful to observe the gradation
“ of this fatal malady, with respect to the
“ various descriptions of people exposed to
“ its infection. Neither age nor sex were
“ exempted from its attack, but some were
“ more obnoxious to it than others, and the
“ colour had evidently much influence in de-
“ termining its violence. The scale of its
“ violence, or the gradation it observed with
“ respect to the different classes of the in-
“ habitants, appeared to be the following :

“ I. Sailors,

“ I. Sailors, more especially the robust
“ and young, those least accustomed to the
“ climate, and those most given to drinking
“ new rum.

“ II. Soldiers ; more especially recruits
“ lately from Europe, and the most intem-
“ perate.

“ III. White males, in general, lately
“ arrived, more especially young men from
“ Europe.

“ IV. All other white males, more espe-
“ cially the lower classes ; and of them, the
“ most intemperate, those debilitated by re-
“ cent sickness.

“ V. White females, more especially those
“ connected with the shipping, and those
“ lately from Europe.

“ VI. People of colour, from Mustees to
“ Cabres,” (that is, I think, inversely as the
darkness of complexion).

“ VII. Negro men, more especially sailors
“ and porters.

“ VIII. Negro women, more especially
“ house wenches.

“ IX. Children, more especially those of
“ colour.”

Infants,

Infants, whose organic movements are not yet regulated by habit, seem to afford an exception to the rule of predisposition. They are, it is said, less liable to some contagious fevers; and when infected, their chance of recovery is much greater; the latter circumstance has been noticed by various observers (*e*). If children were only less liable to be infected, the difference might be fairly supposed to depend on their not coming so often within the infecting distance; but after infection they are protected by some unknown peculiarity. Is the contagion weakened, when first swallowed by a diarrhoea, as was the case with some persons who received the dangerous infection at the Black affizes at Oxford? Or has the gastric liquor of children, some power to render the poison inert? This inferiority of power in one or two particular contagions, to infect and destroy children, deserves further enquiry.

Of the Depressing Passions.

There are several other opinions, which,

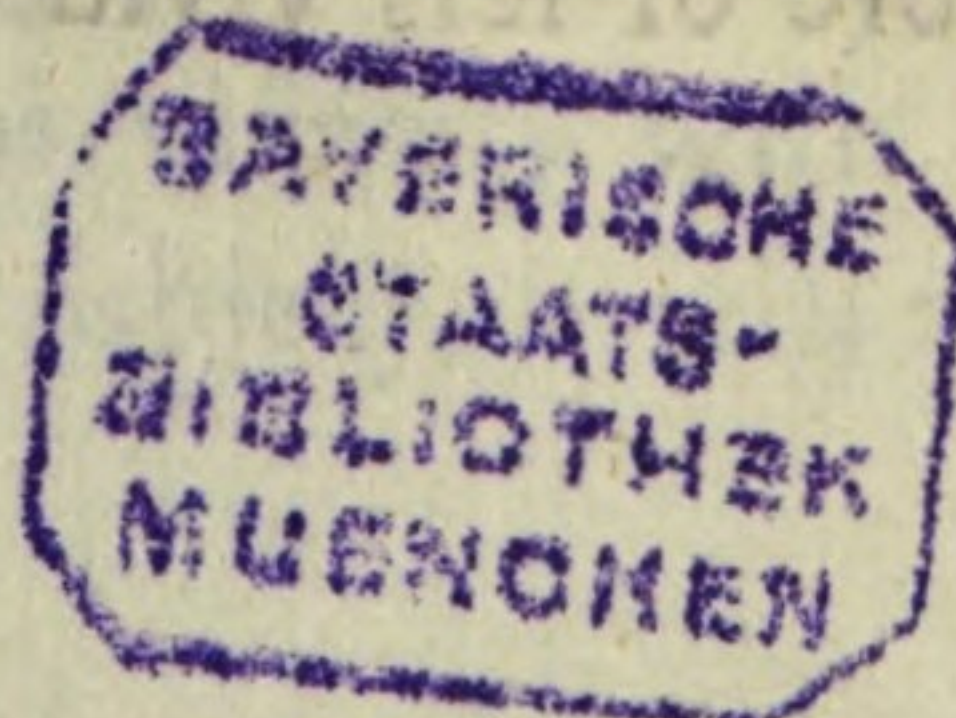
(*e*). See for instance, Campbell's *Observations on Typhus*, 1785, p. 55.

in a complete revival of the Brunonian system, would require particular examination; such are his doctrine concerning hereditary diseases, the peculiar seat of sthenic inflammation, and the nature of the passions. This last subject is of great importance, and if, in treating it, Brown has failed, he has but shared the fate of other writers. The *mechanism of the passions*, or the state of our different organs, while we are under their influence, has never been explained. If any proof be required of the general want of information on this subject, it may easily be produced. Writers, educated in different systems, and who cannot be supposed to have been misled by the undistinguishing ardour of youthful enthusiasm, have found no better resource than to adopt Brown's theory (*f*).

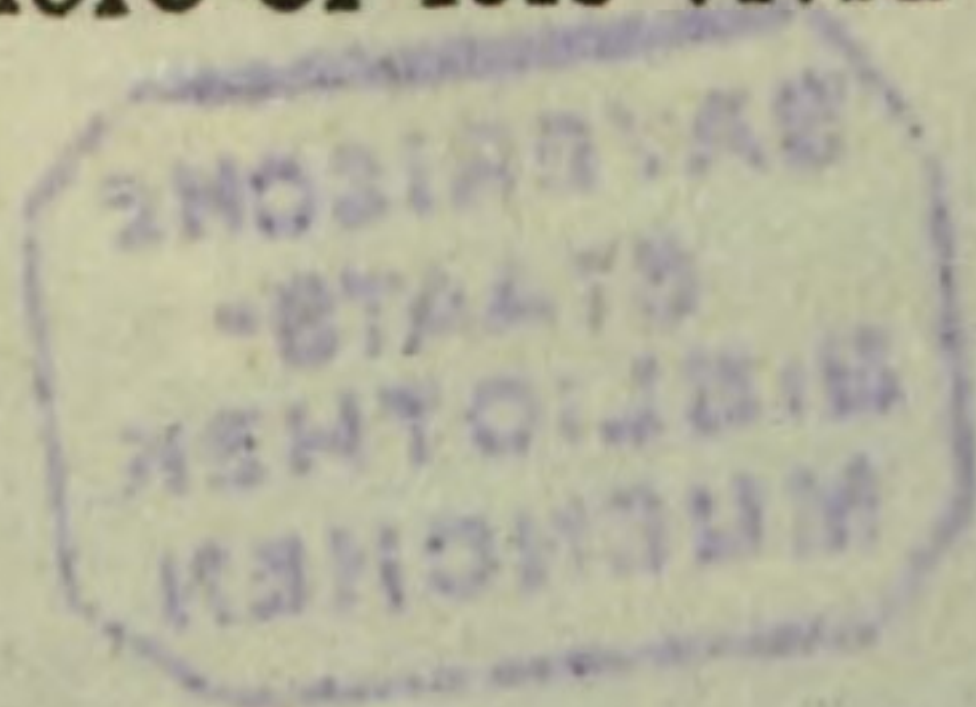
In fear, grief, and anxiety, some parts manifestly betray, by their paleness and coldness, diminished exertion. Now as no two parts, according to our author, can be in op-

(*f*). See Dr. Rush on the fever of Philadelphia, p. 31.
“ Fear debilitates only because it abstracts its antagonist
“ passion of courage.”

posite



posite conditions at the same time, what could he in consistency do, but assert that the doctrine of heat and cold is exactly applicable to the passions (Part I. Chap. iii. n.)? In high spirits, therefore, we are to suppose ourselves animated by something corresponding to the warmth of summer; in tranquillity we are lowered by a subtraction of this mental stimulus down to temperate, and in grief we sink to the freezing point; how far the common opinion varies from this of Brown, I cannot exactly say, because I do not understand what particular change the words *depressing* or *sedative* passions, are designed to indicate. When I try to assist my apprehension by some analogy, I find nothing in nature to help me out, but am obliged to think of certain passages in books of romance, where the enchanter is described as inducing a state of permanent torpor by the motion of his wand. To discover whether any of the passions have a *benumbing* operation, does not appear very difficult; let us take a transient look into the mind of a mother sorrowing for the loss of her son, I ask whether her ideas are more or less vivid than usual? whether



ther she does not exert herself to recollect all he said or did between the cradle and the grave? whether after minutely considering what he has been, she does not set herself with equal earnestness to fancy what he would have been? and whether every picture formerly drawn by hope, does not pass again before her imagination, with the figures more strongly illuminated, and more distinctly embodied?

“ Grief fills the room up of my absent child;
 “ Lies in his bed; walks up and down with
 “ me;
 “ Puts on his pretty looks; repeats his words;
 “ Remembers me of all his gracious parts;
 “ Stuffs out his vacant garments with his
 “ form;
 “ Thus have I reason to be fond of grief.”

CONSTANCE *in the Play of King John.*

If this expression of sorrow be not too strong, while an happy meeting is still believed possible, it may be doubted whether the faculties of Shakspeare or Schiller, strained to their utmost pitch, are equal to that intensity of thought which takes place when this hope is finally destroyed. Fear and anxiety excite images of equal vivacity with grief, and on considering the subject, it will appear that for
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these states of mind, *perturbation*, which occurs in the writings of the ancient philosophers, is a far more apt term than *passion*. Had it not been for inaccurate language, which the author of the *Enquiry into the State of Medicine* justly calls the greatest of all plagues in science, the opinions I am inviting the reader to compare with nature, would probably never have existed. Neither should we perhaps have been taught, that in grief the mind moves slowly—an assertion as distant from the truth, as if it should be said that animals in full chase of their prey, move more slowly than when they are not actuated by any appetite; for the eagerness, with which some train of ideas is pursued in pensive sorrow, admits of a comparison with hunting.

The excitability, therefore, is exhausted by any passion or perturbation, in the same manner as by excessive excitement in other cases. Whether temporary weariness, or irreparable debility shall ensue, depends upon the intensity and duration of the exertions, made by the organs in action. The explanation of the difference between *weeping* and *tearless* grief, with the means of curing either and changing the latter (which is a much more

more dangerous disease) into the former, depends on principles, not to be found in the following system. In the present specimen of criticism, it is the less necessary to enter upon these enquiries, as the public may soon expect better instruction on the pathological part of this subject than I am able to give.

Conclusion.

The Brunonian system has frequently been charged with promoting intemperance; the objection is serious, but the view already given of its principles shews it to be groundless. No writer had insisted so much upon the dependence of life on external causes, or so strongly stated the inevitable consequences of excess. And there are no means of promoting morality upon which we can rely, except the knowledge of the true relations between man and other beings or bodies. For by this knowledge we are directly led to shun what is hurtful, and pursue what is salutary; and in what else does moral conduct, as far as it regards the individual, consist? It may be said that the author's life disproves the justness of this representation; his life, however, only shews the
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the superior power of other causes, and of bad habits in particular, and I am ready to acknowledge the little efficacy of instruction, when bad habits are formed. Its great use consists in preventing their formation, for which reason popular instruction in medicine would contribute more to the happiness of the human species, than the complete knowledge of every thing which is attempted to be taught in education, as it is conducted at present. But though the principles of the system in question did not correct the propensities of its inventor, it does not follow that they tend to produce the same propensities in others.

The distinguishing merit of Brown is obvious; he avoided all false analogies, and confined himself within the proper sphere of observation for a physician. Hence at a time when I could not be suspected of that disposition to diminish the faults, and magnify the excellencies of his system, which my share in the present publication may be supposed to produce; I was led to remark, that “if he has not always discovered the
“truth, he is seldom forsaken by the spirit of
“philo-

“philosophy (g).” Before him investigations relative to medicine, had been carried on just as rationally as if to discover the qualities of the horse, the naturalist were to direct his attention to the movements of a windmill. There existed no system which was not either entirely, or in a great measure, founded upon the observed or supposed properties of substances, destitute of life. Thus Boerhaave taught that diseases depend upon changes of the blood, similar to those which certain oily, watery, or mucilaginous liquors undergo; and I have already had occasion to shew that Cullen referred the phænomena of life to an imaginary fluid, endowed with the same properties as the electric fluid; though of this the very existence is still problematical (h). His

(g). Observations on Calculus, p. 159.

(h). Mr. Hunter, who deserves so much praise for ascertaining facts, has been led astray in some of his attempts to establish principles, by a different, but a very curious species of delusion. In treating of that obscure subject, for instance, the coagulation of the blood, he observes that it sometimes takes place very quickly, as in mortification; but then “it is to answer some good purpose, and arises from NECESSITY, which appears to act as a stimulus in disposing the blood to coagulate.” He adds that by “actions taking place from necessity, effects are meant which arise from some unusual or unnatural change going on in the parts, and become a stimulus to action. The

predecessors having in this manner left MAN entirely out of their systems, or assigned him an unimportant place, Brown achieved the important service of restoring him to his proper station in the centre. We have other obligations to him; but as I have already had occasion to point out some of them in the course of these preliminary observations, and as the rest will be discovered by an attentive perusal of the following work, I shall leave the task of singling them out, and appreciating them to the impartial reader. In forming this estimate he should have be-

“stimuli from this cause may vary exceedingly among themselves: but as we are unable to investigate them, I have included them under this general term, *stimulus of necessity*.” (*On the blood*, p. 24). It may be laid down as a rule in logic, that general terms ought never to be employed, unless we can substitute particular terms expressive of appearances in their place. Mr. Hunter confesses his ignorance of those changes, which he comprehends under the phrase, *stimulus of necessity*. It is manifest, therefore, that it refers to nothing cognizable by sense; and his position amounts simply to this, *the blood coagulates because it must coagulate*. This is not the only occasion on which this ingenious anatomist has been betrayed into the mysticism of occult causes; and it would probably create some surprize in an ancient poet to find allegorical beings like NECESSITY and DEATH, figuring in a modern work among the principles of physiology. It is easy to excuse Mr. Hunter for mistaking nominal for real essences; but the example deserves notice as it so clearly shews the extensive utility of the philosophy of words.

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fore him, 1. The difficulty of emancipating the mind from the dominion of inveterate and accredited error. 2. The much greater difficulty of giving a new form to a complicated and obscure science.

Three years ago I had occasion to observe, that the opinions of Brown had been so widely diffused by oral communication, as to affect the whole practice of medicine in Great Britain. In pamphlets recommending repeated doses of opium to support excitement, and in other publications, it would be easy to detect attempts to purloin his language and ideas; but it is unnecessary, for though literature has always been infested by a race of pilferers, original genius has seldom been injured by their dishonest practices. Brown cannot now be defrauded of his just reputation. His writings have lately been republished (*k*), and are gaining credit on the continent of Europe. In America his superiority to preceding systematic authors, appears to be acknowledged alike by students and professors (*l*).

(*k*). See *Brunonis Elem. Med. cum Prefatione Petri Moschati*.

(*l*). See Rush on the yellow fever, and some inaugural dissertations lately published at Philadelphia.

To speak of the dangerous influence of his system on practice, I think as useless now as to detect plagiarisms. His disciples have sometimes disgraced themselves by that rashness, which was too much the characteristic of his school. But a cool perusal of his work will not produce the effect of his animated, and sometimes frantic prelections. What he has left can only inform or exercise the understanding; but he retains no power to inflame the imagination from the grave.

Since the preceding pages were printed, I have received further indubitable proofs of the ascendancy which the truths, promulgated by Brown, are gaining over men's minds in different parts of Europe. A translation of his "OBSERVATIONS" under the title of *Compendio della nuova dottrina medica di G. Brown* was published at Pavia in 1792. It has been since republished at Venice, and so has Moscati's Edition of the *Elementa*. The translation is by Dr. Rasori, who has prefixed a sensible introduction, and added many judicious notes. In a letter, accompanying a copy of his translation, Dr. Rasori says, "In the University
 " of Pavia, undoubtedly one of the first in Europe, there is
 " hardly a student, endowed with talents, who is not a Bruno-
 " nian. The doctrine begins equally to spread in Germany.
 " Many of the periodical publications of that country have no-
 " ticed it, and the *Elementa* have lately been published there. A
 " friend at Genoa assures me, that several surgeons to French
 " men of war have informed him, that Brown is known and
 " much admired in France. In the University of Pavia,
 " Brown

“ Brown is in high esteem even with some of the most respectable professors ; and in other parts of Italy I can assert from my own knowledge that old physicians have not refused their sanction to many of the Brunonian principles.”

A late pamphlet entitled *Jacobi Sacchi in principia Theoriae Brunoniae animadversiones*, but supposed to be written by Professor Carminati, affords ample confirmation of the account, given by Dr. Rasori. The first sentence runs thus: *Quaerenti mihi causas incredibilis prope illius commotionis animorum, atque ingentis ferè plausus, quibus nuperrimè singularis illa hypothesis, cui novum universae Medicinae systema celeberrimus Angliae scriptor & medicus BRUNO superstruxit, ab iis optimae spei adolescentibus excepta esset, qui in florentissimo Ticinensi Archigymnasio salutaris artis studiis omnibus mecum incumbunt, per arduum sane non fuit eas invenire.* After some pages of introductory matter, the author objects strongly to Brown's definition of life—*quod ideam vitae non in proprietate seu incitabilitate, sed in actione collocarit.* He adduces various instances in which organic bodies lose sense and motion, without losing their susceptibility of feeling and moving, when differently circumstanced. Professor Carminati, he says, having killed a cat by mephitic air, took out the stomach with the intestines, and exposed them to the influence of a frosty air in his court-yard. They lost by degrees their peristaltic motion, and were frozen stiff. Next day, they were put into warm water ; and when they were thawed, the peristaltic motion returned, and lasted for a long time. This seems to be little else than a dispute about terms. The objector next controverts Brown's grand discovery—*omnia quæ viventium partibus admoventur, sive interna sive externa sint, perpetuo incitantia esse.* He produces the application of cold bodies and blood-letting, as examples of effects produced on the living body otherwise than by stimulating. He forgets that it is the residuary heat and the residuary blood which Brown regards as stimulants, inferior indeed in efficacy but still stimulants. The effect of alkaline substances on acid generated in the stomach, and some other similar cases, are afterwards

afterwards specified, as not comprehended under the general proposition. The author however seems aware that no Brunonian can want the wit to repel these objections. He mentions caustics as exceptions to the rule; he however allows that they are partly beneficial by stimulating, and omits to mention that part of their operation which is *not* stimulating. During this skirmishing, in which the adversary of Brown takes care to retreat nearly as much as he has advanced, he appears to gain courage, for he now attacks the new system in its strongest post. Opium, he affirms, is a medicine which although it has some stimulating power, removes irritation *non eo, sed alio sibi proprio principio*. So are all sedatives. Under this head the power of opium to allay excruciating pain and restrain irregular motions is copiously exemplified; the writer seems to suppose that pain always implies excess of action, and convulsions excess of general power. He acknowledges that volatile stimulants remove *quasdam nervorum aegritudines, sed eas quae a vera debilitate procreantur*. At the close of this article an argument occurs, which I know not how the most determined Brunonian will answer. It is this; if there were no difference but in energy between opium and other drugs, it might be compensated by increasing the dose of these, which is contrary to experience.—An acute opponent would not, the reader may be sure, fail to bring forward the specific action of quick-silver, cantharides and other bodies; he even contends that universal stimulants by no means tend to evince that the *excitability* is one and indivisible, since they are compounds, and their several constituent parts may act upon several portions of the system. Brown was totally inattentive to the association of motions; and our Italian critic does not omit to take advantage of this imperfection. He quotes several instances of the sympathy of similar parts (as the decay of corresponding teeth), and argues from them in the following manner: *juxta diversas aut similes partes, sive sensilitas sive irritabilitas aut diversa aut similis seu aequalis est . . . Hinc ubi causa praedisponens, aut idem stimulus seu eadem causa occasionalis, quae in aliqua corporis sede mor-*
bura

bum intulit, ad aliam quoque similem deferatur, nascetur illico causa proxima, ejusque effectus, nempe morbus: quod quidem fieri non posset in diversa parte, licet eam quoque idem stimulus pertingat. Lastly, the author contends that Brown has improperly given the common name of *excitability*, to irritability and sensibility, properties essentially different.—The theory being thus dismissed, the practice of the Brunonian school is brought under examination. Frozen limbs, it is said, are to be warmed gradually, but only lest the vessels should be burst by the sudden expansion of their contents. So also, a small quantity of food is to be given to persons who have been long fasting, merely because the digestive powers are weak, and not to avoid violent excitement from accumulation of excitability. The writer protests equally against the use of small stimulants in *direct* debility, and of a stimulus nearly equal to that which has induced *indirect* debility, in cases of an opposite nature. On the latter principle, he thinks, the most powerful stimulants ought to be given in the most violent peripneumonies, and blood-letting to be avoided. Under the former head, he asks; *Quis ubi siphylis saeviat atrociter ejus sanationem, validioribus posthabitis mercurialibus, committet lenioribus?*—To prove the reality of contrary indications, the complication of true peripneumony with malignant petechial fever and other diseases, requiring the use of debilitating and strengthening means at the same time are adduced. Several pages are employed to shew that a low temperature is not debilitating and the converse. The Brunonians will easily shew by a few obvious distinctions, to how little purpose the author has laboured here. In conclusion, he points out what he deems absurdities in Brown's opinions concerning the itch, scurvy, epilepsy, and some other disorders.

But whatever justness there may be in some of these remarks, whatever errors Brown may have committed in the application of his principles, and however short his doctrines may fall of a perfect system of medicine, I will venture to predict that his credit on the continent will remain unshaken. The introduction of his

his opinions will have a most beneficial influence upon those by whom they are adopted as well as upon those by whom they are rejected. Brunonians will not imitate the stupidity of the disciples of certain antient philosophers, but exercise their reason in expunging, adding and correcting, as experience shall dictate. With regard to Anti-Brunonians a recent example will explain my meaning. When Lavoisier first announced his system, the chemists who were most scandalized by it, found themselves obliged to revise their whole stock of facts and deductions; the immediate consequence was an entire change in their opinions. Though they would not go over to Lavoisier, they could not adhere to Stahl, but reluctantly abandoned half their errors. The dissemination of the Brunonian doctrine will bring about the same thorough lustration of opinions in medicine, and the most pernicious among the prevailing prejudices will be relinquished without a contest.

The reader may estimate what it is to have put so many nations into the right path of medical investigation. It is true, indeed, that we in Great Britain, suppose ourselves to have enjoyed the privilege of being purblind, while the eyes of foreigners were sealed to the agency of those causes that actuate animated nature; and would it not be a pity if we should lose our distinction? But though we should be outstripped in medicine by the awakened genius of France, or the enlightened industry of Germany, we shall not be without consolation: since in consequence of Brown's discoveries, our countrymen labouring under disorders, such as we cannot cure, stand a chance of profiting by the collective efforts of human ingenuity.

ERRATA.

Page lvii. line 13, for *would* read *could*.—P. lxvi.—viii—ix.—some are wanting to mark the omission of clauses.—P. lxxii. l. 19, for *sows* read *avows*.—P. lxxiv. l. 12, for *solicited* read *elicited*.—P. lxxxviii. l. 16, for *then* read *with them*.—P. cxlv. l. 9, before *we* insert *and*.

TABLE

URE.

to support the excitement. The remedies, electricity, opium, æther, spirituous bark, snake root, camphor, rich soups,

to diminish the excitement; which is to remove all stimuli, and employing slight or deep sleep, tranquillity of mind, bleeding, &c.

as above, to diminish the excitement,

grees, rarely occurs; in consequence of the stimulus being less, so that the excitement commonly

to increase the excitement. The remedies are exhibited for the cure of indirect spasm, that here it is necessary to begin with small doses, and increase it gradually.

are the same as above, but stimuli must be given cautiously.

are the same here also, but still greater caution is required in the application of stimuli.

ON THE PUPIL,

SAMUEL LYNCH.

BAYERISCHE
STAATS
BIBLIOTHEK
MÜNCHEN

THE

E L E M E N T S

OF

M E D I C I N E.

THE FIRST AND REASONING PART.

C H A P. I.

E X P L A N A T I O N S.

Of medicine—Of health, good and ill—Of diseases local and universal—Of predisposition.

I. **M**EDICINE is the science of preserving the good, and of preventing and curing the ill, health of animals.

II. The application of this science to vegetables, may be named Agriculture.

III. Good health consists in a pleasant, easy, and exact use of all the functions.

IV. Ill health consists in an uneasy, difficult, or disturbed exercise of all or any of the functions. Diseases come under this head.

V. Diseases either extend over the whole system, or are confined to a part; the former may not improperly be called universal or general, the latter local.

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VI. The former are always universal from their very commencement, the latter only in their progress, and that but seldom. The former are always, the latter never, preceded by predisposition. The former proceed from an affection of the principle of life, the latter from local injury. The cure of those is applied to the whole body, of these to the injured part.

VII. To the province of the Physician belong all universal diseases, and as many of the local, as being at first limited to a part, afterwards affect the whole body, and assume, in some measure, the appearance of universal diseases.

VIII. Predisposition to disease is that state of the body, which recedes from health, and approaches to disease, in such a manner, as to seem still within the boundaries of the former, to which, however, it bears only deceitful resemblance.

IX. These three states of health, disease, and predisposition, constitute the life or living state of animals; to which that of vegetables is not dissimilar, though more imperfect.

CHAP.

C H A P. II.

Of life—Of the exciting powers, external and internal—Of excitability—Of excitement—Of stimuli.

X. IN all the states of life, man and other animals differ from themselves in their dead state, or from any other inanimate matter, in this property alone; *they can be affected by external agents, as well as by certain functions peculiar to themselves, in such a manner, that the phenomena peculiar to the living state can be produced.* This proposition extends to every thing that is vital in nature, and therefore applies to vegetables.

XI. The external agents are reducible to heat, diet, and other substances taken into the stomach, the blood, the fluids secreted from the blood, and air. How poisons and contagions come under the same view shall afterwards be explained.

XII. The functions of the system itself, producing the same effect, are muscular con-

traction, sense or perception, and the energy of the brain in thinking, and in exciting passion and emotion. These affect the system in the same manner as the other agents; and they arise both from the other and from themselves.

XIII. If the property which distinguishes living from dead matter, or the operation of either of the two sets of powers be withdrawn, life ceases. Nothing else than the presence of these is necessary to life.

XIV. The property, on which both sets of powers act, may be named *Excitability*; and the powers themselves, *Exciting Powers*. By the word *Body*, is meant both the body simply so called, and also as endued with an intellectual part, a part appropriated to passion and emotion, or a soul: the usual appellation in medical writings is *system* (*a*).

XV. The effects, common to all the exciting powers, are sense, motion, mental exertion, and passion. Now their effects being

(*a*) No disquisition is here meant to be entered into, as religion is no where interfered with, but left to its proper guardians.

the

the same, it must be granted, that the operation of all the powers is the same (*b*).

XVI. The effect of the exciting powers acting upon the excitability, may be denominated *Excitement*.

XVII. Since some of the exciting powers evidently act by impulse, and the identity of the effect of others implies the same mode of operation; and since they all possess a certain activity; they may be denominated stimulant, or stimuli.

a. Stimuli are either universal or local.

c. The universal stimuli are exciting powers, so acting upon the excitability, as always to produce some excitement over the whole system. The appellation of universal, is convenient to distinguish them from the local.

(*b*) That is, since sense, motion, mental functions, and the passions are the only, and constant, effects of the exciting powers, acting upon the excitability; and since these happen, whether one, or more, or all the powers, or whichever of them, act, the irresistible conclusion, that arises in the mind, is, that, the effect of the powers being the same, the mode of operation of them all must be the same. This mode of reasoning, which is certainly as just as it is new in medicine, will often occur, and, we trust, will stand the test of the most scrupulous scrutiny.

γ. The local stimuli act only on the part to which they are applied; and do not, without previously producing an affection in it, affect the rest of the body.

C H A P. III.

Of the nature of excitability—and exciting powers—Of poisons—contagions—debilitating food—Of the sedative or depressing passions—Of the nature and limits of excitement—Of its production—Succession and substitution of stimuli—Treatment of exhausted—and accumulated excitability.

XVIII. WE know not what excitability is, or in what manner it is affected by the exciting powers. But, whatever it be, whether a quality or a substance, a certain portion is assigned to every being upon the commencement of its living state. The quantity, or energy, is different in different animals, and in the same animal at different times. It is partly owing to the uncertain nature of the subject, partly to the poverty of language, and partly to the novelty of this doctrine, that the phrases of the excitability being abundant, increased, accumulated, superfluous, weak,

not well enough sustained, not well enough exercised, or deficient in energy, when enough of stimulus has not been applied—tired, fatigued, worn out, languid, exhausted or consumed, when the stimulus has operated in a violent degree—at other times in vigour, or reduced to one half, when the stimulus has neither been applied in excess nor defect, will be employed in different parts of this work. Both upon this, and every other subject, we must abide by facts; and carefully avoid the slippery question concerning causes, as being in general incomprehensible, and as having ever proved the bane of philosophy.

XIX. As there is always some excitability, however small, while life remains, and as the action of the exciting powers always takes place in some degree, I conclude that they have all more or less of stimulant effect, and that this must be either excessive, in due proportion, or too small. A great quantity of blood stimulates in excess, and, therefore, produces the diseases that depend upon too much stimulus; but an under proportion of blood, though debilitating in its effect, and inducing the diseases that depend upon debility,

bility, must still be understood to be stimulant ; only so much less stimulant, as the penury is more considerable: The same conclusion applies to all the other exciting powers, though poisons, contagions, and a few other powers, may to some seem exceptions. But

XX. Poisons either do not produce the universal diseases, which are our present subject : or, if they do, by producing the same effect as the ordinary exciting powers, their mode of operation must also be allowed to be the same (*a*).

XXI. Some contagions accompany diseases depending on too much stimulus, as the small pox and measles ; others those that consist in debility, as the petechial typhus, the plague. If both these are the product, not of contagion alone, but also of the noxious stimulating powers, acting in conjunction, which

(*a*) This proposition of frequent occurrence in this work, that identity of known effect always implies identity of cause though unknown, will be found to be a mode of reasoning of equal service in guarding our reader from the deceitfulness of abstract reasoning, and in leading him into a proper mode of investigating solid and useful truth.

is a fact ascertained; the effect being the same, the conclusion is unavoidable, that the cause is also the same, and the mode of operation of both the same. It must, therefore, be admitted that the operation of contagions is stimulant (*b*). Moreover, no remedies, but those that cure diseases, produced by the usual noxious powers, remove those supposed to be induced by contagions. Finally, the great debilitating energy, observable in certain contagions, no more proves that *they* act differently from the ordinary noxious powers, than an equal or greater degree of debility arising from cold proves that *it* acts differently (*c*).

δ. It might appear to some, that certain kinds of food, not sufficiently nourishing, and, therefore, of hurtful tendency; as also that emetics, and purgatives, and sedative passions, as they are called, belong to the number of

(*b*) This is all that is contended for at present; the degree of their stimulus will be afterwards considered.

(*c*) At the freezing point, or below it, man, and similar animals of warm blood, could not live a second in a dense medium, such as that of water; but the animals of cold blood can.

powers,

powers, the operation of which forms so many exceptions to the ordinary stimulant operation.

ε. Vegetable matter in general, when used alone for nourishment, is hurtful; it is so, at least, to those who have been accustomed to better fare, and that by a debilitating operation; yet even vegetable food, since it supports life, however poorly, longer than a total want of food, must, of course, be stimulant. But, if asthenic diseases, in some instances, arise from vegetable food, and not always from fasting; this must be owing to a certain change produced in the system, by which the sum total of stimuli is rendered less fit to act upon the excitability. That this is the case, is proved by the most stimulant food losing part of its effect by continued use, and requiring the substitution of another stimulus in its place, to produce equal excitement.

ζ. The operation of emetics and purgatives is also to be explained, as diminishing the sum total of excitement; which is supported, either by some affinity between the exciting power and the excitability, or by agreeable sensation. That it is sometimes the affinity,
sometimes

sometimes the sensation, is evident from the occasionally hurtful effect of things most grateful to the sense, as the legumina, and other articles of vegetable food; and from the salutary effect of disagreeable things, as the several forms and preparations of opium: Both which produce their effect, the former by a debilitating, that is, an insufficiently stimulant, the latter by a considerably stimulant, operation (*d*).

7. The

(*d*) Suppose a certain power, as 40, to mark the degree, in which the sum total of proper stimulant operation consists, and the excitement, produced to that degree, to arise from different exciting powers, all of them conducing to the same effect, by the operation of each having a proper affinity to the excitability, or producing an agreeable sensation; the inference to be drawn is, that a certain suitableness in the mixture of the whole to the excitability, as well as the degree of stimulus, produces the effect. Again, suppose certain ingredients, which cannot be denied to be stimulant, added to this mixture, the effect of the added article will be one of two: it will either increase the excitement first produced, without altering the agreeable state which that had induced; or it will, still without any reason for supposing it not stimulant, diminish the excitement that had arisen from the combination of the agreeable articles. And this will happen merely from the effect of
a discordant

η. The sedative affections, as they are called, are only a less degree of the exciting ones. Thus fear and grief are only diminutions, or lower degrees, of confidence and joy, not passions different in kind. The news of gain produces joy, and grief arises from the loss of money. Here then no operation of a nature contrary to stimulant takes

a discordant combination of exciting powers, while that, which diminishes the exciting effect of the others, as well as these others, that constituted its given sum, are both stimulant; but the former in a higher, the latter in a lower degree, and therefore acting over all as debilitating powers. Mustard taken with meat, or onions with beef-steaks, are agreeable to most tastes; but they are, though still stimulant, disagreeable to others, and debilitating. Peas-soup and peas-pudding, though, independent of the animal juice infused into them, they are far from being salutary, will be well borne by many; while in others, especially those who have been accustomed to more stimulant meals, and in persons who are gouty, and liable to complaints of the first passages, they will produce morbid affection. The same thing is to be said of beef-steaks with onions, which agree with the healthy state, and disagree with the unhealthy state of the first passages. With regard to all these enfeebling matters, there is no question about their being stimulant; the whole effect is to be referred to their rendering a mixture, stimulant in a certain degree, less so. . . .

place ;

place; it is nothing but a diminution, or inferior degree, of stimulant operation. The subject of the passions admits of the same reasoning in every respect as that of heat (*e*); and in the same manner all the bodies in nature, that seem to be sedative, are debilitating, that is, weakly stimulant; inducing debility by a degree of stimulus greatly inferior to the proper one.

XXII. Since the general powers produce all the phænomena of life, and the only operation, by which they do so, is stimulant; it follows, that the whole phænomena of life, every state and degree of health and disease, are also owing to stimulus, and to no other cause.

XXIII. Excitement, the effect of the exciting powers, the true cause of life, is, within certain boundaries, proportional to the degree of stimulus. The degree of stimulus, when moderate, produces health; in a higher degree it gives occasion to diseases of excessive stimulus; in a lower degree, or exces-

(*e*) The doctrine of cold as an active power, and opposite to heat, is now universally rejected, and it is considered as only a diminution of heat.

fively

sively weak, it induces those that depend upon a deficiency of stimulus, or debility. And, as excitement is the cause both of diseases and perfect health ; so that which restores the morbid to the healthy state, is a diminution of excitement in diseases of excessive stimulus, and an increase of excitement in diseases of debility. These intentions are called Indications of Cure.

XXIV. This mutual relation obtains betwixt excitability and excitement, that the more weakly the powers have acted, or the less the stimulus has been, the more abundant the excitability becomes ; the more powerful the stimulus, the excitability becomes the more exhausted.

XXV. A mean stimulus, acting on a mean or half consumed excitability, produces the highest excitement. And the excitement becomes less and less, in proportion either as the stimulus is applied in a higher degree, or as the excitability is more accumulated. Hence the vigour of youth, and the weakness of childhood and old age. Hence, within a shorter period, a middle diet will produce
vigour,

vigour, and excess, or abstemiousness, debility.

XXVI. Every age, therefore, and every constitution, if the excitement be properly directed, has its appropriate degree of vigour. Childhood, and that weakness, which depends on abundant excitability, admit of little stimulus; by less than the due proportion it is rendered languid, by more it is oppressed. Old age, and that weakness, which is occasioned by a deficiency of excitability, require a great deal of stimulus, become enfeebled by less, and are overset by more. The reason of the latter phenomenon is, that the excitability, without which no vital action is produced, does not exist in the degree necessary to vigour of the functions; while the former is to be explained from the exciting or stimulant power, without which the excitability lies dormant, not being applied in the degree requisite to vigour. The failure of stimulus may be such, as to produce death. On the contrary, the exhaustion of excitability may go so far, as to extinguish life by the extreme excess of stimulus.

XXVII. The circumstances, under which
excitement

excitement is produced, have two boundaries.

XXVIII. One of these is, exhaustion of the excitability from violence of stimulus. For all the stimulant powers may carry their energy to the degree, under which no excitement will arise. The reason is, that the body becomes no longer susceptible to the operation of stimulus; another expression for which is, that the excitability is consumed.

XXIX. The cessation of excitement, from the exhaustion of the excitability by stimulus, may be either temporary or irreparable: it may arise either from the short continuance of a strong stimulus, or the long application of one more moderate. Both cases come to the same; the strength of the stimulus compensating for the shortness of its application, and the length of its application for its greater moderation in degree. A force of stimulus as fix operating for a space of time as one; and a force of stimulus as one operating for a space of time as fix, will produce the same effect in wearing out the excitability. The effect of the former is sud-

den death ; of the latter a more gradual death preceded by diseases. And though a most exact measure of excitement be kept up, yet death at last, however late, will supervene.

XXX. Ebriety, debauch in eating, sweat, languor, heat, either alone or succeeding to cold, dulness of mental exertion from excessive thinking, depression of mind from violence of passion, finally, sleep ; are all consequences of the short application of a high degree of stimulus, operating an exhaustion of excitability. The long continuance of less excessive stimuli is followed by the feebleness of old age, by predisposition to diseases of debility, as well as those diseases themselves. The termination of both is in death.

XXXI. When the excitability is wasted by any one stimulus, there is still a reserve capable of being acted upon by any other. Thus a person, who has dined fully, or is either fatigued in body, or tired with intellectual exertion, and therefore has a disposition to sleep, will be refreshed by strong liquors ; and, when these have produced the same sleepiness, the more diffusible stimulus

mulus of opium will arouse him (*f*). Even after opium fails, and leaves him heavy and oppressed, a stimulus still higher and more diffusible, if there be any such, will have the same effect. A person fatigued with a journey will be roused by music to dance and skip; and he will be enabled to run after a

(*f*) A gentleman, engaged in a literary composition, which required an uninterrupted exertion of his mental faculties for more than forty hours, was enabled to go through it with alacrity, by supporting himself in this manner. After dining well and setting to business, he took a glass of wine every hour. Ten hours after he ate something nourishing, but sparing in quantity, and for some hours kept himself up with punch not too strong. And, when he found himself at last like to be overcome by an inclination to sleep, he changed all his stimuli for an opiate; and finished his business in forty hours. What he had wrote was now to be put to the press. He had next to watch and correct the proofs, which cost him between four or five hours further continuance of vigilance and activity. To effect this he took a glass with the master printer, while his men were going on with their part of the work. The succession of stimuli in this case was first food, next the stimulus of the intellectual function, then wine, then the food varied, then punch, then opium, then punch and conversation.

flying beauty, if she fly so as to leave him hopes of overtaking her.

XXXII. The exhaustion of excitability, by successive stimuli, is most difficultly repaired; because the more stimulant operation has been employed, that is, the more stimuli have been applied, there remains the less susceptibility to fresh stimuli, by which the failure of excitement might be removed.

XXXIII. The reason of the difficulty is, that no means of reproducing the healthy state, or the proper degree of excitement, are left; except those that occasioned the waste, that is, an excess of stimulant operation, rendering the body less and less susceptible of stimulus.

XXXIV. After this waste of excitement, there is danger of speedy death, unless proper measures be taken to preserve life by a powerful stimulus, but less than that which occasioned it, and then by one still less, till by means of the moderate stimulus, that is suitable to nature, or one somewhat greater, life may at last be secured. The difficult cure of drunkards and gluttons, affected with disease, sufficiently evinces, that this consideration

deration applies to all the exciting powers that stimulate in excess. This proposition applies to the most difficult part of the practice of medicine.

XXXV. The excitability thus exhausted by stimulus constitutes *debility*, which may be denominated *indirect*, because it does not arise from defect, but excess of stimulus.

XXXVI. Through the whole progress to indirect debility, the second application of every stimulus has less effect than the first, the third less than the second, and so forth to the last, which produces no more excitement; this effect takes place in proportion to the degree or duration of the several applications, though each gives some excitement. Hence, before the establishment of indirect debility, and just as it is upon the eve of being established, the stimulus which is producing it, should be withdrawn; a debilitating power should be applied; as in giving over drinking wine at the end of an entertainment, and substituting water in its place, or applying cold to a person who has

C 3

been

been exposed to an excessive degree of heat (*g*).

XXXVII. The progress to indirect debility is also retarded by diminishing the excitement from time to time, and proportionally increasing the excitability, and thereby giving more effect to the action of stimuli. Take for example, cold bathing, or lowering the diet from time to time, or a similar abatement of other stimulant powers.

θ. If cold sometimes seems to stimulate, it produces this effect, not as actual cold, but either by diminishing excessive heat, and restoring the proper stimulant temperature (*h*),
or

(*g*) A convalescent from a disease of debility was prescribed wine, but not to carry it to excess. A hiccup was the signal, by which he was to understand, that he had carried that stimulus too far. He desisted, and ended his jollity with two or three tumbler glasses of water; which prevented the establishment of the indirect debility into which he was about to fall.

(*h*) The principle upon which the operation of the cold bath depends has never been understood, and therefore all reasoning, as well as practice, with respect to it, has been conducted in quite a vague and random manner. Suppose a range of excitement, the middle and healthy point of which is 40 degrees of excitement,
the

or by rendering the body accessible to air, or by accumulating the excitability diminished by excessive stimulus, and heightening the effect of the exciting powers, before acting too languidly. An instance of this operation of cold occurs in the torrid zone, where actual cold is scarcely to be procured; in the use of refrigerants, as they are called, in fevers; and in the contraction, by means of cold, of the scrotum previously relaxed by

the ultimate degree of its excess 70. It is, therefore, the intermediate degrees between these extremes, to which the practice of cold bathing is applicable. From 80 to 70, the former of which is the head of the scale, and constitutes the range of indirect debility; and likewise through all the intermediate degrees from 40 down to 0, the cold bath, which is a weakening power, as well as every other, is improper. It is a mistake prevalent among systematic writers and lecturers, that cold is of service in the fevers and other diseases of the torrid zone. The truth is, that, in that country, there is no access to the use of actual cold. All that can be done there is, by various means, to diminish the excess of heat, which is constantly rushing from those degrees of it which stimulate and excite, to those, in which its ultimate stimulant power destroys excitement, and leaves nothing but indirect debility.

heat. Nay, such is the efficacy of this cause, that sthenic diseases may be more certainly produced by cold, alternating with heat, and either preceding or following it, than by pure heat.

XXXVIII. The other condition or circumstance, limiting excitement, is, a state of the exciting powers insufficient to produce excitement. As this case arises from deficiency of stimulus, and abundant excitability, it ought to be distinguished from the other, which supposes abundance of stimulus, and deficiency of excitability. This distinction is required also for the purpose of practice. All the exciting powers may fall so far short in stimulant force, as to produce this effect. They all, therefore, equally serve to illustrate and confirm this proposition.

XXXIX. In this case, the excitability becomes abundant, because, in consequence of the stimuli being withheld, it is not exhausted. Thus, in the cold bath, the excitement is diminished, because the stimulus of heat is reduced, and, therefore, the sum of all the stimuli falls short; so that the excitability, being less exhausted by stimulus, is increased (*i*). The

(i). The same conclusion applies to famished persons, to water drinkers, to those who are in

(i) This is altogether a negative circumstance. The accumulation, increase, or abundance of excitability, take any term you please, is not occasioned by any action or operation, but by the want of action, the want of operation. To form an adequate idea of it, suppose a scale of excitability of 80 degrees, as in the line here drawn.

EXCITING POWER.

0 10 20 30 40 50 60 70 80

EXCITABILITY.

80 70 60 50 40 30 20 10 0

At the commencement of life, the sum total assigned is understood to be 80, because no part, as yet, is wasted by the action of stimuli. Next it is wasted in proportion as these are applied from the beginning to the end of the scale. Its wasting is, therefore, owing to action and operation, but its accumulation to the reverse, the want of the action or operation of the exciting powers, as is expressed by the numbers placed above those first mentioned. Thus one degree of exciting power applied takes off one degree of excitability, and every subsequent degree impairs the excitability in a proportion exactly equal to its degree of force. Thus a degree of stimulant or exciting power equal to 10, reduces the excitability to 70; 20 to 60; 30 to 50; 40 to 40; 50 to 30; 60 to 20; 70 to 10; 80 to 0. And on the contrary, the

in a state of refrigeration from other causes, to those who have suffered evacuations of any kind, to those who have neglected the stimulus of exercise, to those who have neglected the use of that stimulus, which exercise of the mind affords, and to persons in low spirits. The withdrawing of any stimulus is the more likely to produce direct debility, as the person has been accustomed to a higher degree of it (*k*). Take, for an example, the gout,

the subtraction of stimulant power allows the excitability to accumulate. Thus, when the excitement is at 79, constituting only one degree of life, take off one degree of exciting power, and two degrees of excitability will arise. As 80 degrees of exciting power leave no excitability, so 70 degrees of exciting power leave 10; 60 20; 50 30; 40 40; 30 50; 20 60; 10 70; 0 80. Hence death takes place from nothing positive, but from the negation of the only means by which life is supported; which are the several exciting or stimulant powers, now fully explained.

(*k*) For instance, persons accustomed to drink wine, and eat well-seasoned nourishing animal food, will be more hurt by a water and vegetable regimen, than those who have not lived so high in that respect. The inhabitants of Britain could not live long upon the diet of the Gentoos. Persons in genteel life could never undergo the work of day labourers upon their fare.

and

and many other diseases, which, under the same circumstances, affect some, and spare others (1).

XL. During the increase of excitability, the excitement proportionally decreases, nor is there any case, in which this process, carried far enough, will not produce death. This is confirmed by the effect of all the debilitating powers, mentioned above; every individual of which, as often as it proves urgent, has a rapid tendency to produce death.

XLI. The defect of any one stimulus, and the proportional abundance of excitability, are for the time, compensated by any other stimulus, and often with great advantage to the system. So a person, who has dined insufficiently, and therefore has not been well enough stimulated, is refreshed by a piece of good news.

(1) Vegetable aliment, and fruits and cold roots, as cucumbers, melons, acid drinks, and many other things not sufficiently stimulant, will bring on a fit of the gout, all or any one of them, at any time; while there are other persons free from the taint which distinguishes that disease, who can use them with impunity, or, at least, with much more freedom and less harm. Something similar to this observation applies to most diseases.

Or,

Or, if during the course of the day, he has not been sufficiently invigorated by the stimulant operation of corporeal or mental exercise, and is consequently likely to pass a sleepless night, he will be laid asleep by a dose of strong liquor. When the latter is not at hand, opium will supply its place. The want of the venereal gratification is relieved by wine, and the want of the latter is made amends for by the use of the former, each banishing the languor occasioned by the want of the other. The same conclusion applies to the use of those stimuli, for which we have an artificial, rather than a natural, craving. The longing for snuff, when it cannot be gotten, is gratified by the practice of chewing tobacco; and, when any one is languid for want of tobacco to chew, smoaking supplies the place of it. Nay, when the functions, as they often do, have undergone a temporary lesion, and on this account there is no access to the use of certain customary and natural stimuli; the substitution of others, less habitual, and less natural, will support life, till the desire for the natural stimuli is restored, and these can
be

be employed to support the natural vigour as usual, and health is finally established (*m*).

XLII. As, in this manner, the superabundance of excitability, proportioned to the deficiency of stimulus, may, through all the degrees from its smallest to its greatest quantity, be worn out to a certain extent, by one stimulus, and then another, and the danger of its morbid accumulation be warded off, till the sum be brought down to that, which is suitable to health; so, the more abundant the excitability is, that is, the more stimuli are withdrawn, or the greater the failure of the most powerful stimuli is; the less it is in our power to maintain that mediocrity of excitability on which the vigour of life depends. So much debility may be induced and excitability so far accumulated, that the restoration of excitement shall become impracticable. This proposition is both illustrated and confirmed by the action of every debilitating

(*m*) This proposition is of the utmost importance, as holding out the true principle, upon which so many actions and feelings of human life, both in health and disease, are to be explained, and particularly as laying down an indication, which applies to $\frac{1}{20}$ ths of all febrile diseases, and includes our artificial as well as our natural desires and appetites.

power

power, as cold, famine, thirst; and it is exemplified in fevers.

XLIII. This superabundant excitability so speedily brings on death, that the only means of restoring health is first to encounter it with a very small dose of diffusible stimulus, a dose scarcely exceeding the scanty portion of stimulus, that occasioned it: after wasting a part of the superabundance, we may proceed to a somewhat stronger dose; and thus be constantly taking off whatever superfluity still remains, till at last the salutary mediocrity is regained. This state is the converse of that debility, which arises from a worn-out excitability (*n*), and the danger accruing from it. To give examples, a famished person is not immediately to be gratified with a full meal; a person afflicted with long continued or excessive thirst is not immediately to be indulged with a large draught; but food should be given bit by bit, and drink drop by

(*n*) An instance of a worn-out excitability is that debility which arises from intoxication; one of an accumulated excitability is that which dram-drinkers experience the day after a debauch, in consequence of which their hands shake till they are re-excited by their favorite cordial.

drop,

drop, then both of them by degrees more plentifully. A person benumbed with cold should be gradually warmed. A person in deep sorrow should have good news gradually communicated to him. The news of the safety of the Roman soldier, who survived the disaster of his countrymen at Cannæ, should have been communicated to his mother in a round-about way; at first as having no better foundation than doubtful report; then as being somewhat more to be depended on; afterwards as being still more probable; then as not admitting a shadow of doubt: and last of all, before he was introduced, the mother should have been at the same time fortified, or had a part of her very abundant excitability taken off, by other stimuli, and a glass of Falernian wine.

XLIV. Since life is solely the effect of stimulus; which also produces disease in proportion to its excess or defect, the remedies of both these deviations from the proper standard should be accommodated to their degree; and a large sum total of stimulus, through the course of the disease, must be applied to a great degree of debility, or, what comes

comes to the same thing, to a very abundant excitability; but the quantity to be applied at any one time should be small, in the same proportion as the excitability is abundant.

XLV. The debility arising from defect of stimulus may be called DIRECT; because it is not produced by any positive noxious power, but by a subduction of the things necessary to support life.

XLVI. Through the whole course of direct debility, every deficiency of stimulus is increased by a second, the second by a third, the third by a fourth, till the effect at last comes to be a cessation of any further excitement. Excitement therefore, is never to be lessened, and debility increased, with the view of giving greater effect to a new stimulus by accumulating excitability. For, as often as this is put in practice, the morbid state is increased; and, if the debility should happen to be great, any further increase may induce death, but will never increase the strength. For, though debility may be induced in this way at pleasure, the excitement to be obtained from a stimulus to be applied after is confined within narrow bound-

boundaries (*o*). Take for an example, cold bathing in dropfy; in the gout; in fevers (*p*); in persons who, previous to this, have been much exposed to cold; or in any sort of debility. Who would treat fasting, deep sorrow,

(*o*) Suppose, that in place of an excitement of 40 degrees, the excitement is gone down to 30, and the excitability mounted up to 50, and a debilitating power, such as the cold bath, or any of those that are just now to be mentioned in the text, has been superadded, reducing the excitement to 25, and accumulating the excitability to 55. Suppose also, that any stimulus is next employed, with a view to raise the excitement, and sink or reduce the excitability; what will be the result? As an accumulated excitability admits of a very small degree of stimulus at any given time, while the accumulation of excitability, and sinking of excitement, even to death itself, can be effected in the shortest space of time, and by any one of the debilitating powers; consequently, the loss of vigour by the first practice, and the reparation of it by the last, will bear no proportion to one another; there will be no possibility of regaining the vigour thrown away, much less any hope of procuring more than existed before it was lowered.

(*p*) By fevers here are meant those diseases, so named, which depend on evident debility, and not any of those which, though most injudiciously so named, depend upon an opposite cause. Instances of the former we have in

sorrow, weakness of the mental functions, languor from inactivity, penury of blood, which are all cases of direct debility; who would treat such cases, I say, by superinducing more direct debility, with a view to advantage from the very scanty stimulus, that can be admitted? The accumulation of excitability is only proper where there is a predisposition to indirect debility, or asthenic diathesis.

XLVII. With respect to the two kinds of debility, we must never attempt the cure of the indirect by the direct, or of the direct by the indirect, in the vain hope of obtaining benefit from the subsequent employment of any stimulus. Indirect debility appears in the range of scale from 70 up to 80; the direct, in all the degrees below 40 to 0. The only cases, that admit of debilitating operation, are those of excessive excitement from 40 up to 70. For all the fevers of the intermittent or remittent kind, in synochus, typhus, and the plague itself, with others that have never been considered as fevers. Examples of the latter occur in synocha, or the common inflammatory fever, in the several diseases of the same stamp accompanied with inflammation in a particular part, as in the throat, lungs, and various parts of the external surface.

the

the cure of diseases within this latter range, all the directly debilitating powers are proper, and, for the most part, they only; because there is no access to the use of the indirectly debilitating powers, till they have run their full course of stimulant operation from 40 to 70, at which last only they become debilitating; and, though sometimes, and under certain circumstances, they may be employed, the safest general rule is to avoid them.

C H A P. IV.

Of the seat and effects of excitability—Of the inequality with which different powers affect the system—Which parts most affected—Proportion of the partial to the general affection—What parts the ordinary powers most affect—Partial and local affections similar and synchronous—Remedies do not act partially.

XLVIII. THE seat of excitability in the living body is the medullary nervous matter, and muscular solid; to which the appellation of *nervous system* may be given. In this the excitability is inherent, but is not different in different parts of its seat. This is evident, because the exciting powers will immediately rouse into exertion any of the functions that distinguish living animal systems; or, in other words, produce sense, motion, thought or passion (a).

.. Different

(a) If a small quantity of an opiate, or a large one of any strong spirit, taken into the stomach, can instantly alleviate

„ Different exciting powers are applied to different parts of the nervous system, none to them all at once ; but the mode of their action is such, that, wherever they are applied, every one immediately affects the whole excitability.

XLIX. Every one of these powers always affects some one part more than any other, and different powers affect different parts in this unequal manner. The affected part is

viate an excruciating pain in a part the most distant from that to which the remedy is applied, and, in a short time after, remove it altogether, as is now well known, how is that to be explained but by the above proposition ; it being impossible to pretend that it is carried in the vessels ? Nor is any other of the many hypotheses, that have been thought of for the solution of this fact, more admissible. Should it be imagined, that it moves along the nerves according to the last opinion, we demand proof of that assertion ; which has not yet, and will not easily be produced ; while the fact just now assigned carries its own demonstration in its bosom. The question resolves itself wholly into the following solution : Why does opium at once relieve the gout in the stomach, on the external surface, and in the remotest extremity of that surface ? Because the property in the living system, upon which and by which it acts, is one and the same over all.

generally that to which the power is directly applied.

«. Moreover, the more excitability was assigned to any part originally, that is, the more vivid and sensible it is, the operation of each exciting power, whether acting with due force, or in excess, or in defect, is the more considerable (*b*). Thus the brain and alimentary canal possess more vivid excitability, that is, more propensity to life, than other internal parts; and the parts below the nails, than other external parts.—Nevertheless, the affection of the part bears no proportion to that diffused over the whole body.

L. An estimate may be formed of the degree of affection in the part most affected, and of that which is diffused over the whole body, by comparing the affection of the former with as many less affections, taken together, as there are equal parts in all the rest

(*b*) That is to say, if the exciting power acts with that force which produces health, the degree of its action is greater upon the given than any other part; as also when its action is either greater or less than that of the middle salutary degree.

of

of the body. Suppose the greater affection of a part (*c*) to be as 6, and the less affection of every other part to be 3, and the number of the parts less affected to amount to 1000; which is keeping greatly within the truth. The ratio of affection confined to the part, to the affection of all the rest of the body, will be as 6 to 3000. That this estimate is accurate, or nearly so, appears by the effect of the exciting noxious powers, which always act upon the whole body (*d*); and from that of the remedies, which always re-
move

(*c*) As the inflammation of the lungs in peripneumony, the inflammation of the foot in the gout, the effusion of water into a general or particular cavity in dropsy.

(*d*) The hurtful powers, which produce peripneumony, in common English, the inflammation of the lungs, are excess in eating, drinking, exposure to heat, or to the alternation of heat with cold, an over proportion of blood from inactivity, or an increased velocity of its motion from violent labour, &c. the effect of any or all which must fall as much upon every other part of the system as upon a small portion of extreme vessels in the lungs, and therefore the morbid affection produced cannot be confined to the latter, but must be extended to the former. The whole body must partake of the

move the effect of the noxious powers from the whole body (*e*), in every general disease (*f*).

LI. Temperature particularly affects the surface of the body; diet, the stomach and morbid change; it must be one common affection pervading the whole. If this is not probation, let any thing left on record by authors, or any living physician, produce a single hurtful power, that, without affecting the system over all, can penetrate into the inmost recesses of the lungs, and there produce an inflammation. I shall be content with one such hurtful power, and in exchange for it, when produced, give up my whole doctrine.

(*e*) Here too I throw the gauntlet. Find a single remedy which removes the disease by an operation confined to the lungs. There is not one.

(*f*) A wound in the lungs, among other effects, may produce an inflammation. But that is not a peripneumony, or a general disease at all. It is, on the contrary, a local one, arising from a local cause, and to be removed by local remedies, if access could be had to them. And though nothing has been more common than blending such cases of local and general disease, at the same time no error, that has hitherto crept into the art, needs more to be corrected. Such an accident is as much a peripneumony, as an inflammation from contusion in the foot is a gout, or the swelled legs of women heavy with child is dropsy. But of all this more hereafter.

bowels;

bowels; the blood and other fluids their respective vessels; labour and rest both the vessels and muscular fibres; passion and meditation, the brain; all these affect the parts mentioned (each that upon which its action is exerted) more than any other equal part.

LII. Instances of the greater excitement of a part than of the rest of the body, are afforded by the earlier sweating of the brow of an healthy person, when he is using exercise; by checked perspiration; by inflammation, or some analogous affection in general diseases; by head-ach and delirium. Proofs of a less excitement in a part are excessive perspiration not occasioned by labour or heat, especially when cold and clammy, profusion of the other excretions, spasm, convulsion, partial palsy, weakness or confusion of intellect, and again delirium.

LIII. As the operation of the general powers, whether exciting in excess, in due proportion, or in defect, is directed to some one part a little more, than to any other equal part; the effect must be of the same kind

kind in that part as in the rest, and, as well as the general operation, be either in excess, or in just proportion, or deficient, but never of an opposite nature. For, as the exciting powers are the same, and the excitability every where the same, it is impossible that the effect should not be the same. The excitement, therefore, is never increased in a part, while it is diminished in the general system—nor diminished, while the general excitement is increased. There is no difference here, but in degree; nor can different effects flow from one and the same cause.

λ. For though, on account of the great sensibility of certain parts, for instance, of the stomach (g), and the action, either stimulating or debilitating, exerted by the exciting powers on them, these parts run soonest either into direct or indirect debility, or into high excitement; this effect is but of short duration, and the rest of the functions are

(g) For the same reason, i. e. the sensibility of the genital system, wine and other strong liquors, as well as opium, induce indirect debility sooner upon these parts than others.

soon

soon hurried into the same state. Thus, nausea, vomiting, diarrhoea, and other similar symptoms, produced by strong liquors and opiates: as well as the same affections apparently, and the gout, colic, gripes, and other similar symptoms, occasioned by abstinence and water drinking: likewise good appetite, and the removal of these turbulent symptoms of the stomach and intestines, in the convalescent state, in consequence of a proper administration of food, drink, and diffusible stimulants: all these are shortly followed by a similar state of the rest of the body, and the establishment of indirect debility is the consequence of the first case; that of direct debility succeeds to the second; and health over all is the termination of the last.

LIV. No part, therefore, is the seat of general affection; they extend over the whole body; because, with the inequality above stated, the whole excitability is affected in every general disease.

LV. Neither does the affection of the most suffering part take place first, and afterwards spread

spread over the system; for as soon as the excitability is affected any where, it is also and immediately affected every where. Both facts are confirmed by the operation of every exciting power, affecting the whole body as quickly as any one part; by general morbid affections appearing equally soon over all the system, and commonly sooner, than in the part most affected in the course of the disease (*b*). Therefore

LVI. Every affection of a part, that occurs in general diseases, however formidable, is to be considered as only a part of the affection inherent in the whole body; and the remedies are not to be directed to a part, as if the whole disease lurked there, and was only to

(*b*) The pain of the thorax in peripneumony, which is the sign of the inflammation within, never appears so soon as the general affection, and in more than one-half of many hundred cases, where this fact has been painfully scrutinized, it did not appear till one, two, or three days after the commencement of the general affection. Likewise the pain of the gout is not the first of the phenomena of that disease. But all these, and many more particulars, will be brought in with more advantage in their proper places afterwards.

be

be removed thence, but to the whole body, all which it affects (*i*).

(*i*) When the affection of a part is external, and, therefore, accessible, the application of a remedy over it, in conjunction with the use of the internal remedies, is of service, in consequence of their mutually assisting each other. A rag drenched in a liquid opiate helps the operation of that remedy taken internally; but that is still by operating upon the excitability over all.

C H A P. V.

Of Contraction and its effects—Excitement the cause of density—Difference of strength in the muscles in health—in sickness—and after death.

LVII. MUSCULAR contraction depends upon excitement, and is proportional to the degree of excitement (*k*). This is proved by all the phenomena of health and disease, and by the operations of all the exciting powers and of all the remedies. Force and propensity to motion are the same. We must judge from facts, not from appearances. Consequently, tremor, convulsion, and every affection comprehended under it, are to be imputed to debility. The noxious exciting power in these cases is a stimulus uncommonly irritating applied to the part.

(*k*) It has already been proved, that all the functions depend upon excitement, and therefore contraction among the rest.

LVII. The

LVIII. The degree of contraction, that constitutes spasm, is not an exception from this proposition. This is a continued and deficient, rather than a great and due action; and in so far as it is a strong contraction, it depends upon the local stimulus of distension, or of something equivalent to distension. It consists in diminished excitement, is devoid of force, and removed by stimulant remedies. The appearance of symptoms, being ever fallacious, ought not to be relied on as the foundation of any judgment. Take now both the fact and the explanation.

LIX. As the degree of contraction, in so far as it is a healthy function, depends upon strength, we are to hold it as certain, that the density of muscular fibres, considered as simple solids, is proportioned to the degree of their contraction.

LX. It must therefore be admitted, that excitement is the cause of density. And the density is rendered greater and greater by the excitement in proportion to its degree. It is easy to perceive this through all the intermediate degrees of strength; from the highest,
est,

est, or that which takes place in madness, and the density corresponding to it, to the lowest, or that debility which is observed in the article of death, in death itself, and after death, with a laxity corresponding to it. This is proved by the weakness of the fibres in their dead, and their strength in their living, state; the only cause of which difference, we know for certain, to be excitement (1).

LXI. Hence the cavities of the vessels, through their whole tract, over the whole body, are diminished in a state of strength, and encreased in weakness. This is the true cause of diminished perspiration, not constriction from cold or spasm.

(1) Experiments have been made by baron Haller and others, to ascertain the comparative strength of muscular fibres, and the criterion of judgment was their greater or less disposition to break by appended weights; but the power by which any body resists stretching, is the density of that body. Those experiments show, that the fibres in the living body are prodigiously stronger than in the dead.

C H A P. VI.

The forms of diseases and predispositions—Relation between health, predisposition, and disease—All from varied excitement—Life regulated by excitement—Sthenic and asthenic diseases—and diatheses.

LXII. EXCITEMENT, the effect of the exciting powers, when of a proper degree, constitutes health : when either excessive or deficient, it proves the occasion of disease, or of predisposition, previous to the formation of disease. The state both of the simple solids and fluids depends upon the state of health, which is regulated by the excitement (*a*).

μ . The first cause of the formation of simple solids, and the sole cause of their preservation, is excitement. Under the direction of the excitement, the living solids produce

(*a*) This proposition overturns the principal systems that have ever appeared in the profession of medicine: But more of it hereafter.

the blood from an external matter taken into the system, keep it in motion, form its mixture, secrete from it various fluids, excrete them, absorb others, and circulate and expel them from the body. It is the excitement alone, through its varying degrees, that produces either health, disease, or recovery. It alone governs both universal and local diseases: neither of which ever arise from faults of the solids or fluids, but always either from increased or diminished excitement. Hence the cure is never to be directed to the state of the solids or fluids, but only to the diminution or the increase of excitement.

LXIII. Affections peculiar to parts, or organic maladies, being foreign to this part of the work, in which the treatment of the general state of the body only is considered, they are passed over at present.

LXIV. That life is entirely regulated by excitement appears, 1. because the exciting powers have a stimulating effect only: 2. because the activity of the functions is proportional to the strength of the exciting powers: and 3. because efficacious remedies are such as
oppose

oppose deficient stimulus to excessive excitement, and excessive stimulus to deficient excitement.

LXV. The notion of health and disease being different states is disproved by the identity of the operation of the powers producing or removing each state.

LXVI. The general diseases, arising from excessive excitement, are called *sthenic* (*b*); those that originate from a deficient excitement, *asthenic*. Hence there are two forms of diseases, and both are always preceded by predisposition.

LXVII. That this is the only real origin of diseases and predispositions, is proved by the same powers, which produce any disease or predisposition, also producing the whole set of diseases to which it belongs; and by the same remedies, which cure any disease, or predisposition, also curing all the diseases

(*b*) Their old name is phlogistic: but as that word is absurdly metaphorical from an old notion of that sort of diseases depending upon fire or flame; and because it was not a proper contrast to the term here to be opposed to it; as also because it is still more ridiculous when applied to plants, which are comprehended in this doctrine; it has been thought proper to reject it, and substitute the other in its place.

and predispositions of its respective form (*c*). Betwixt these opposite sets of disease and predisposition, perfect health is the mean, leaning to neither extreme.

LXVIII. The exciting powers, which produce *s*thenic predisposition, or *s*thenic diseases, should be denominated *s*thenic, or stimulant, in a strict sense. Those that pave the way to *a*sthenic diseases, or produce them, should be called *a*sthenic, or debili-

(*c*) The same noxious powers produce, and the same remedies remove, both catarrh and peripneumony, diseases only differing in degree. The powers producing them are excess in the use of stimulants, and the remedies whatever moderates that excess. Evacuation, cold, and starving, are the means. All the difference is, that more of the means are employed for the cure of peripneumony than for that of catarrh. The noxious powers producing indigestion and fevers are also the same, to wit, debilitating; and the remedies the same, to wit, stimulant. Only a small degree of the remedies, proportioned to the slightness of the degree of the cause, is sufficient for the cure of indigestion; while the most diffusible stimuli are required to effect the cure of fevers. Stimulants, in one degree or other, make the cure of all *a*sthenic diseases; evacuants, and other weakening means, in different degrees, form the whole cure of the *s*thenic form of diseases. Might not this have been known long since?

tating.

tating. The state producing the former or the predisposition to them, may be called *sthenic diathesis*; that which occasions the latter, with the predisposition peculiar to them, *asthenic diathesis*. Each of these diatheses is a state of the body common both to predisposition and disease, which differ only in degree. I distinguish the powers, that raise both the diatheses to the measure of disease, by the term *exciting noxious powers*. The *sthenic* diseases, in which the pulse is much affected, should not be denominated fevers or febrile diseases, but *pyrexies*, for the sake of distinguishing them from the *asthenic* diseases, that disturb the pulse, for which fever is the proper name.

C H A P. VII.

The effect of both the diatheses, and of the most perfect health itself—Sthenic powers raise—asthenic lower the functions—Why man is not immortal—Conversion of the diatheses into each other—Fallacy of symptoms—Life a forced state.

LXIX. THE common effect of the sthenic noxious powers upon the functions is, first, to increase them, then to impair them in part, but never by a debilitating operation (*a*). The effect common to the asthenic noxious powers, upon the *functions*, is to diminish them, in such a manner, as sometimes to seem, though the appearance is fallacious (*b*), to increase them.

LXX. If

(*a*) The inability to perform motion in peripneumony arises not from debility, for two good reasons; first, no powers, but those that produce all the other symptoms, produce it; and the same remedies, that remove the other symptoms, are equally effectual for the removal of it.

(*b*) Spasm and convulsion, supposed to arise from increased

LXX. If the just degree of excitement could be constantly kept up, mankind would enjoy eternal health. But two circumstances prevent that. Such is the nature of the sthenic diathesis, that it wastes the sum total of excitability assigned to every being upon the commencement of its living state, and thereby sooner or later induces disease, and afterwards death. This is one cause of mortality.

LXXI. The asthenic diathesis is hurtful by not supplying the degree of excitement necessary to health, and thereby allowing the state of life to approach more nearly to that, in which death consists. This opens another gate of destruction to mankind.

v. Further, diseases and death are consequences of the change of either diathesis into the other. Either diathesis, by means of the noxious powers producing the other, when these are employed as remedies (*c*), may, by accident, increased influx of the nervous power, are both occasioned, and cured, by the same powers, as all the other symptoms.

(*c*) Stimulants are the proper remedies for curing the gout; but they may be carried so far as to produce so

accident, inadvertence, or design, be completely converted into the other; and by opposite measures, carried to a certain extent, it may be changed back to the same state from which it set out (*d*). This observation will

much sthenic diathesis as to border upon indirect debility. A consequence of which is vomiting, purging, a feeling of burning in the intestines, intermission of the pulse, and strangury; which are only to be cured by substituting watery drink and low diet in place of those opposite remedies. Nay, the stimulants may be carried so far, as to effect the establishment of indirect debility. Hence will arise paralytic affection, anasarca, dropsy, &c. The evacuants and other debilitating remedies, by which the diseases of sthenic diathesis are removed, may, by being pushed to excess, produce the last mentioned diseases, as depending on direct debility.

(*d*) Pushing the remedies of sthenic diseases too far, may reduce the patient to an incipient dropsy; and the remedies of the latter may be urged to such excess, as to pass the range of sthenic diathesis, and terminate in indirect debility. A is affected with a disease of debility, where the excitement has gone down to 10, the excitability mounted up to 70, degrees in the scale. What is to be done? By a proper use of high stimulants the 30 degrees of lost excitement may be restored, and as many of superfluous excitability discharged, and the excitement and excitability made to meet again at the middle point of 40. If the remedies are carried up to any

will be found of the greatest consequence in the cure both of predispositions and diseases (*e*). What is wanting to further illustration shall be given hereafter. Hydrothorax succeeding peripneumony is an instance of the change of sthenic diathesis into asthenic. Again, the immoderate use of stimulants may convert any asthenic affection

any degree betwixt 40 and 55, they have gone too far, and produced predisposition to sthenic diseases; if still farther, but not exceeding 70, they will have produced one or other of these diseases. But carried beyond 70, the diseases, which their operation produces, are those of indirect debility. Any disease of this sort, when treated according to a rule lately delivered, will be cured. But if the stimulants adapted to this purpose be urged further, the sthenic diathesis will again be produced; and the debilitating power, suited to the removal of it, may carry down the excitement below 40 into the range of predisposition betwixt 40 and 25; and then, by a further abuse of remedies, which should only be used in the range betwixt 40 and 70, the excitement may return to the same point from which it set out, to wit, the point of 10, and the excitability rise to its original point, that of 70.

(*e*) It must never be forgotten, that we are nothing in ourselves, but, while we have any excitability remaining in proper capacity to be acted upon, we entirely depend on the exciting powers acting on it.

into

into a sthenic one; as when a violent cough, a catarrh, or an inflammatory sore throat, is induced in consequence of the treatment of the gout, though proper in kind, being carried to excess in degree.

§. Though excitement regulates all the phenomena of life; yet the symptoms of diseases, which either its excess or deficiency produces, do not of themselves lead to any proper judgment respecting it; on the contrary, their fallacious appearance has proved the source of infinite error.

LXXII. From all that has hitherto been said, it is certain, that life is not a natural, but a forced state; that the tendency of animals every moment is to dissolution; that they are kept from it, not by any powers in themselves, but by foreign powers, and even by these with difficulty, and only for a time; and then, from the necessity of their fate, they yield to death.

C H A P. VIII.

Of predisposition—Definition—Predisposition necessarily precedes disease—even in case of contagions and poisons—Criterion of general diseases—What diseases are not general.

LXXIII. PREDISPOSITION is a state intermediate betwixt perfect health and disease. The powers producing it are the same with those which produce disease.

LXXIV. The period of predisposition will be shorter or longer, according to the greater or less force of the noxious powers that have induced it; and the interval between health and actual disease will be more quickly or slowly passed over.

LXXV. That predisposition necessarily precedes diseases, is evident, as it arises from the same exciting powers, acting upon the same excitability, from which both health and disease arise, and is an intermediate state betwixt both. And, as the excitement of
health

health differs much from that of disease; it cannot be supposed, that the former immediately mounts up to the latter, and skips over the boundaries of predisposition: nay, the contrary is certain and beyond a doubt.

LXXVI. Contagious diseases do not furnish an exception to this observation; because, whether the matter of contagion act by a stimulant or a debilitating operation, its operation is the same with that of the ordinary powers, that is to say, the cause of disease is the same (*a*). If, as sometimes happens,

(*a*) The small-pox and measles are cured by the same means as peripneumony or any other sthenic disease; and, excepting the contagious matter, arise from the same stimulant hurtful powers; they must, therefore, with the same exception, be the same. The only difference is, that they are accompanied with a contagious matter, and the other sthenic diseases are not. The amount of which is altogether unimportant. For, if the ordinary powers have not operated, the affection does not come under the definition of general disease; none of the functions receding from their natural state, and the eruption amounting to no more than a slight local complaint. It is, therefore, only of use to regard the general circumstances of these diseases, making no more account

pens, no general affection follows the application of contagion, if no undue excess or defect of excitement is the consequence, the affection is altogether local and foreign to this place.

LXXVII.

account of the local part, than to consider, arrange, and treat it as such. It is well known, that, when by the means used for the cure of sthenic diseases without contagion, and their sequel, eruption, the sthenic diathesis is prevented or removed, the local part gives no trouble; and that the disease is never dangerous but from the neglect of that management. But the management is nothing else but the ordinary one in any sthenic case. If it should be contended, that, all that being granted, still the eruption may contribute a little: Be it so, and it can be but very little; what is the effect? The cure shows it; which is exactly the same as in sthenic diseases without eruption. The disease, therefore, being the same (for its mere local part is out of the question, as only requiring a peculiar exposure to cold, which is equally proper in every sthenic disease); every part of reasoning respecting it, and, consequently, that affecting the question about predisposition, must also be the same. If, therefore, other general diseases have their predisposition, so must the small-pox, the measles, and the plague itself. If it should still be said, that the eruptive diseases, though in other respects the same with the non-eruptive, differ, in so far as predisposition is required as a common

LXXVII. Any morbid affection that poisons may produce without predisposition is not to be considered as a general disease, both for this very reason, and because it can neither be removed nor relieved by the usual treatment of general diseases; and the diversity of the effect proves, that both the cause and exciting noxious power are different from the general ones. In one word, since predisposition and disease differ only in degree, the unavoidable conclusion is, that whatever, with a given force, produces the latter when acting with a less force, will produce the

mon circumstance between them; the answer is, that that difference only respects their local part, which, without the powers producing the disease, is insignificant and a mere local complaint. As general sthenic diseases, the small-pox and measles, and as general asthenic ones, contagious fever and the plague, to the full extent of their generality, have their period of predisposition; we may have occasion afterward to establish the question about predisposition to them even as local diseases, but this is not the place for it; all that was required here being to settle the question about predisposition to them as general diseases. In the same point of view all that has been said of contagious diseases, will apply to diseases in which poisons may have been concerned.

former.

former. The only cure for most poisons is their early discharge from the system. And if, as often happens, others, by wounding an organ necessary to life, are fatal; the effect of both is foreign from our present subject, and to be referred to local diseases.

LXXVIII. In the powers producing either predisposition or completely formed general disease, the only thing worth investigating is the proportion which those producing the predisposition bear to those producing the disease; in order to learn the degree of noxious force possessed by each, and the degree of curative means necessary to remove the effect. Distinctions between the powers producing predisposition, and those that excite disease, under the general appellation of predisponent or occasional causes, have been multiplied and refined upon without end. But the whole system of remote causes, as they have been called, is false in its first idea. The noxious powers, whatever they be called, that produce diseases, also produce the predisposition to them. Which being once admitted, as it henceforth must, the whole fabric of aitiology, or of the doctrine of remote causes, must fall
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to the ground: Consequently, *simply remote causes*, not divisible into predisponent and occasional; *relative remote causes*, or such as are so divisible; *internal and external predisponent, internal and external occasional, causes; approaching causes*, or *causæ propriores, proximate causes*, of which, not only one, but often several, are assigned to every disease, must cease in medical language, and attention will be turned away from the endless pursuit of distinctions without a difference, to the study of the solid and useful facts that nature holds up to contemplation in great abundance, when once our eyes are fairly opened to them.

LXXIX. The knowledge of predisposition is of great importance; as enabling the physician to prevent diseases, from his acquaintance with the powers that lead to them; to comprehend the true cause of them founded in predisposition; and to distinguish them from local affections, which are widely different. Such is the simplicity to which medicine is thus reduced; that when a physician comes to the bed-side of a patient, he has only three things to settle in his mind. First, whether

whether the disease be general or local; secondly, if general, whether it be sthenic or asthenic; thirdly, what is its degree? When once he has satisfied himself in these points, all that remains for him to do, is to form his indication or general view of the plan of cure, and carry that into execution by the administration of proper remedies.

LXXX. As predisposition and diseases themselves are the same state; a criterion, by which general good may be distinguished from local diseases will be found in this single circumstance, that general diseases are always, local never, preceded by predisposition. An inflammation in some part of the stomach, or as it has been commonly called, "the inflammation of the stomach," as if it were always of the same kind, produces many symptoms, that bear so great a resemblance to general sthenic diseases, such as peripneumony, that by systematics and nosologists, this and many other inflammations of internal cavities, have been united into an order of diseases, supposed all to partake of one common nature. The gastritis, however, which is its nosological name, is essentially different, both from pe-

ripneumony and all the other general diseases of the order with which it is associated, both in other respects, and in that of which we are speaking. As arising from certain local noxious powers, it is not preceded by predisposition. So when I come to the bed-side of a patient under these circumstances, though I had no previous knowledge of the nature of his disorder, whenever I hear that he has swallowed ground glass, small fish bones, or, perhaps, a great quantity of cayenne pepper, I can be at no loss to discern the nature of the disease, and to find, that it is altogether local; and that for two of the best of all reasons; first, the person having been in perfect health immediately before that accident; and, secondly, because the substances he had swallowed were such as would naturally divide a sound part, or, in the language of our profession, produce a solution of continuity. From this, again, inflammation is an inseparable consequence. And it is equally an universal fact in the animal economy, that, when any part, whether internal or external, which possesses great sensibility, is wounded or otherwise injured in its substance, the pain arising from

from the inflammation superinduced spreads symptoms of disorder over the whole system, which are liable to mislead those, who are not in possession of the criterion we here point out. As such a case then, is not preceded by predisposition, which peripneumony as well as every other sthenic, and every asthenic disease must, from the proofs of the universality of the fact, be allowed to be, it must be local.

LXXXI. As the affection of a part is always the original source of local diseases, and as the distinctions, we have stated, are established upon the solid basis of truth; the following disorders must be rejected from the number of general diseases, however great their resemblance to them may be. Whatever affections, then, arise from any state of a part; from stimuli or from debilitating circumstances not producing any commotion in the whole body, or only in consequence of the violence of the local cause; from compression of a part; from obstruction; from other diseases whether general or local, and not from the exciting powers which produce

general diseases (*b*); all these must be rejected from the number of general diseases, and that for the most solid reasons; to wit, their differing from them in the noxious powers that produce them, in their true cause (*c*), in their cure (*d*), and in every essential respect,

(*b*) Let it here be added, that the powers producing general diseases, are those that act upon the excitability, and are, thereby, quickly communicated over the whole system; while those, that act upon the solid texture of a part, so as to cut, prick, bruise, or contuse it, &c. are the powers productive of local disease.

(*c*) The cause of the inflammation of the stomach has been mentioned. To concentrate it into a definition; it is a solution of the continuity of a solid part in the stomach, by mechanical or acrid means, followed by inflammation and pain, and, in consequence of the great sensibility of the part, propagating symptoms of disorder over all the system. The cause of the general diseases here alluded to is an increase of excitement, and the inflammation accompanying those diseases arises from that increase.

(*d*) The cure of gastritis, or the inflammation of the stomach, is to contrive means to keep the hurtful, and all rude matters, from coming into contact with the inflamed part, and leave that part to heal; taking care, neither to increase the local affection by too sthenic a diet, nor to produce a tendency in the inflammation to
run

respect, agreeing with them in nothing, but in a deceitful and deceiving superficial appearance.

run into gangrene, by the abuse of evacuations and other debilitating powers; and if, than which nothing is more likely, the acuteness or continuance of pain should at last bring on a state of general debility, then to use the palliative means of preventing that bad consequence. The cure of peripneumony is to weaken the system, from the very commencement of the disease, by diminishing the energy of all the exciting powers; that of the abundance of the blood by bleeding; that of the over-proportion of the other fluids by purging, starving; that arising from the stimulus of heat and other excessive stimuli by cold, &c.

C H A P. IX.

The general diagnosis—Variety of diseases from variation in the excitement—Marks of general disease—How to attain useful medical knowledge—Origin of certain internal local affections.

LXXXII. THE violence and danger of universal diseases is in proportion to the excess of excitement (*a*), or its indirect or direct deficiency (*b*); as appears from all that has been said above: consequently, their principal variety depends upon this variation of the degree of excitement.

LXXXIII. The only diagnosis (*c*) of any im-

(*a*) The excess is contained between 40, the point of health in the table, and 70.

(*b*) The cases of indirect deficiency or debility are comprehended betwixt 70 and 80. The direct are all the degrees below 40. Betwixt 40 and 55 consists predisposition to sthenic; betwixt 40 and 25 the predisposition to asthenic diseases.

(*c*) Diagnosis is the doctrine of distinguishing diseases from one another. It was naturally thought to be the

importance is that, by which general diseases are distinguished from those local or symptomatic affections, which, by throwing the whole system into disorder, assume a certain resemblance to universal diseases. The following marks are sufficient for the discrimination of every general disease; first, its being preceded by a diathesis, and this followed by a disease similar to it, and removed by an operation of the remedies of an opposite nature to that which occasioned the disease; while, on the contrary, local affection is distinguished by the affection of a part, and the disorder of the system not arising from any change in the excitement, but being such as may be traced

the greatest importance, when diseases were supposed very numerous, and as different from each other as their names and the various appearances of their symptoms. That, however, has been found to be altogether a mistake in this work, in which the endless variety of general diseases is reduced to two forms, a sthenic and an asthenic one, without any other difference but what consists merely in degree. The huge volumes of diagnostics are then in this chapter superseded; and much labour, not only irksome to the artist, but worse than useless, often pernicious to patients, is proved to be superfluous.

back to that affection; and by the absence of the diathesis of the disease which the local affection resembles, or only its accidental presence.

LXXXIV. In order to attain to this useful knowledge, learn what is necessary from anatomy; waste no time in superfluous study of it; peruse the works of the illustrious Morgagni; dissect subjects; distinguish residuary effects from causes that have passed away; examine diligently many bodies of persons who have been hanged, or have died of wounds, but were otherwise healthy; compare these diligently with the bodies of those who have died of lingering or often repeated diseases; compare every particular with every other, the whole with the whole; guard against rash hypotheses, which if you can, you will be among a very few, who have ever been able to do it; never expect to discover the cause of general disease in dead bodies; be circumspect in forming a judgment.

LXXXV. Internal local affections often consist in a taint that remains after general diseases have passed away: it may therefore assist in forming a right opinion to remark,
that

that there will be less reason for suspecting such a local affection, the less the patient has been subject to general diseases, and the contrary.

C H A P. X.

The general prognosis, or general judgment of the event—Danger according to the degree of the diathesis and importance of the most affected part.

LXXXVI. SINCE the powers producing sthenic and asthenic diathesis always act upon some one part with more force than upon any other equal part; it follows, that the danger of disease during the predisposition, and of death during the disease, increases in proportion to the degree of diathesis, or to the importance of the part principally affected. But, its degree being given, the more equal or general the diathesis is, the more safe it is. Nor does it ever fall heavy upon an organ necessary to life, without instant danger. Hence it is, that peripneumony, apoplexy, phrenitis, erysipelas, and the gout, when the two latter much affect the head, are chiefly formidable.

LXXXVII.

LXXXVII. Local and symptomatic affections ought to be distinguished from general diseases, and the remarks in LXXXIII. LXXXV. transferred to this place.

C H A P. XI.

*The general treatment—Indications of cure—
 Mode of action of remedies—Sthenic and an-
 tisthenic remedies—how to be employed—
 Local and general remedies—What regard is
 to be paid to contagious matter—When the
 middle or tonic treatment is proper—Peculiar
 circumstances must regulate the indication—
 Persons subject to indirect, and direct debi-
 lity—Cure of indirect, and direct debility—
 Danger of weakening the body.*

LXXXVIII. THE indication for the cure of sthenic diathesis is to diminish, that for the cure of the asthenic diathesis is to increase, the excitement, till that degree, which constitutes the mean betwixt its extremes, and which is suited to good health, be restored. This is the only indication of cure that universal diseases admit.

LXXXIX. As both diatheses arise from
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an operation of the exciting powers, the same in kind, but varying in degree; so they are both prevented and removed by an action of the remedies, also the same in kind, but opposite in degree, to that which produced them. As the cause, so is also the plan of treatment, confirmed by an induction from the whole series of facts and phenomena (*a*). The same debilitating remedies, which remove any one sthenic disease, remove that whole set of diseases: and the same stimulant means, which cure any one asthenic dis-

(*a*) Suppose the sthenic diathesis mounted up to 60 in the scale; to reduce it to 40 it is evident, that the 20 degrees of superfluous excitement must be taken off, and, therefore, that remedies operating with a stimulus, weak enough to produce that effect, must be employed: they are still, however, stimulant, and of consequence, though they remove it, still the same in kind, as the powers that produced the diathesis; it having been proved, that they are not to be supposed sedative, both for the reasons already given, and for this additional one, that proof has not been yet brought of a single sedative in nature. As their stimulus, however, is less than that which is required to support the ordinary state of health, they are understood to be debilitating, and, therefore, proper remedies of sthenic diathesis.

(*b*) Sup

ease, remove all the rest (*b*). Are not palsy, in so far as it is curable (*c*), and dropfy, in so far as it is a general affection (*d*), as well as the gout, and fevers, both relieved and removed

(*b*) Suppose the asthenic diathesis to have sunk down to 20; to raise it up to the standard of health, it is plain, from all the propositions hitherto laid down, that the 20 degrees of deficient stimulus must be restored, and, therefore, that remedies operating with a degree of stimulus adequate to the production of that effect, must be used. All the difference betwixt the force of this stimulus and that of the other, is only a difference of 40 degrees. As, therefore, the debilitating powers, though stimulant, employed in the first, removed the morbid superfluity; so the stimulant powers used in this case, called stimulant by way of eminence, remove the morbid deficiency, and, thereby, restore the degree of excitement, that constitutes the standard of health.

(*c*) When the prevalence of debility, and that to such a degree, as to destroy the connexion that subsists betwixt the fibres of muscles, and that function of the brain which we call will, takes place in parts of the system, not only remote from the centre of activity, but beyond the circulation, it must be of difficult cure; because the most powerful means of effecting that operation act most powerfully when taken internally, and much more feebly when applied to the skin.

(*d*) What is called dropfy consists of a case which is a general disease, and a number of others, which are only symptoms

moved by the same remedies? And are not peripneumony, the small-pox, the measles, rheumatism, and catarrh, removed by the same remedies, to wit, evacuants, cold, and starving? But all these remedies in the asthenic case increase, in the sthenic diminish, the energy of life. In both cases the operation is the same, nor is there any diversity but in degree.

XC. The remedies, therefore, of sthenic diathesis are powers exciting by a weaker stimulus, than that which is suited to health; which in this work are denominated, for the sake of brevity, *debilitating or antisthenic remedies*.

XCI. The remedies of asthenic diathesis symptoms of local internal diseases, and to be treated in the last part of this work. These arise from ossifications in the large vessels next the heart, from tumours, whether scirrhus or steatomatous, impeding by their pressure the return of the blood by the veins to the heart. It is the general case that is here alluded to, and the public may depend upon it, that it is to be cured, though not by evacuant means, but, on the contrary, by the high diffusible stimuli, necessary to the cure of the diseases of high debility, such as the extremity of typhus fever, and an expiring gout. All these are cured by high stimulants.

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are powers exciting with more force, than suits the best health; they may be called *stimulants* or *sthenic*, for the sake of distinction.

XCII. These remedies are to be employed with more or less freedom in proportion to the higher or lower degree of each diathesis, and of the local affection depending upon it. And such a choice should be made, that the most powerful may be adapted to the most violent case. But the cure of no disease of considerable violence, and scarcely of any disease at all, ought to be intrusted to any one remedy. The use of several remedies is preferable to that of one; because their energy is applied to the system to a greater extent, and the excitability is more completely and more equally affected. The person, who means that his remedies should go to a particular part, and there, from a local operation, and not by an affection of the excitability, serve his purpose, is equally wise with him, who, by cropping a twig, expects to eradicate a tree. What remedies are of general, what of local operation, shall next be described.

XCIII. General remedies are those, which,
acting

acting upon the excitability, by an operation diffused over the whole body, reproduce the state of health.

XCIV. Local remedies are those, which act by a similar operation on a part, and, by an operation confined to that, restore the sound state.

XCV. Since every universal disease, every predisposition, depends upon increased or diminished excitement, and is removed by the conversion of that into the degree which constitutes the mean betwixt both; in order both to prevent and cure diseases, we must always use the indication proposed, and stimulate or debilitate; never wait, or trust to the supposed powers of nature, which have no real existence.

XCVI. In the indication of cure, the only regard to be had to morbid matter, is to allow time for its passing out of the body. For whether it acts like other exciting powers, sometimes by stimulating, as in the small-pox and measles, at other times by debilitating, as in contagious fevers and the plague, or its action consists in only giving the peculiar form of its respective disease, and, thereby, adding

a local affection to a general one; in either case there is no room for a new indication.

XCVII. For if the disease, as a general one, be properly treated, every eruption and its consequences, every species of inflammation, every species of ulceration, give way to the happy effect of the general plan of cure. And when the event, in consequence of a bad method of cure, threatens to be unfavourable, the local symptoms are proportionally aggravated. This was proved in the small-pox long ago, and in the measles lately (*e*). with equal certainty

(*e*) After the discovery of the nature of the catarrh, the catarrhal symptoms in the measles came naturally to be inquired into. A full trial was given to the refrigerant debilitating plan, in the author's own family, as well as among several patients, and lastly among near an hundred patients in England, treated by the father of one of the author's pupils; who all did well, while of others, who were kept warm, according to a practice that Dr. Sydenham had left as he found it among his alexipharmic contemporaries, many died, and all had a bad recovery. The author's own son and name-son, a boy about six years of age, was stript half naked and allowed to go out and play as he pleased. The only check upon him was, his being allowed nothing but fluid vegetable matter, when he returned home with a keen appetite.

certainty; it is proved in the plague, at least as often as this disease is treated by remedies proper in kind and administered in due proportion; it is proved in the malignant or gangrenous fore throat (*f*), and in other forms of typhus, with a similar local affection. In the two last instances, the danger to life depends upon the degree of general affection, without which there is no occasion for any apprehension from the local. And the same proposition is so true, with respect to the three former, that, though the contagious matter

appetite. This matter will be further explained, and in a more proper place, hereafter. But what has been said was in illustration of the hint in the text.

(*f*) This case of disease has been considered, as wholly and solely seated in the throat, and therefore conjoined with other diseases, where that local affection was understood to be the essential symptom, and a symptom that connected all the cases. But the other cases are sthenic, or to be cured in the ordinary way of bleeding and evacuation; while such a practice is certain death in it, as being not only an asthenic case, that is a case of debility, but one of the highest; and, instead of depending upon the affection of the throat, the affection of the throat depends on it. Give stimulants to the patients labouring under the inflammatory fore throat, and you

matter has been applied, yet, without the general noxious powers preceding, no real general disease arises, the danger is in proportion to their violence, and the whole cure depends upon the general remedies. These facts all concur to show, that no kind of matter, whether contagious or not, contributes any thing towards the general disease it accompanies and discriminates; or, if it does contribute, that it acts exactly as the ordinary powers do.

XCVIII. During both overabundant and deficient excitement, the healthy perspiration is diminished during the predisposition, and suppressed in the course of the disease (which has been already hinted, and will more fully be demonstrated hereafter). It is, therefore,

kill them; bleed, purge, vomit, and starve, in the gangrenous case, and you ensure the same fate. Such, however, are the diseases, that systematics, nosologists, and other strangers in the city of nature, have, from their ignorance of the place, in spite of their natural distance, brought all together. (See Dr. Cullen's *Genera Morborum*, all the three editions, genus VII). As soon will Mile-end and Knightsbridge meet; as soon will London place itself on the Calton-hill, and become an elevated suburb of Edinburgh.

proper

proper that it should be carefully kept up, for the purpose of discharging any hurtful matter from the body. But this suggests no new indication of cure; since the only means of effecting this purpose are those, which tend to remove both the diatheses in proportion to their force, and which are not serviceable as local, but as general remedies (g).

XCIX.

(g) The discovery of the support of perspiration upon a principle, which extends to all the phenomena of the subject, was reserved for this work. The heating remedies of the alexipharmic physicians were intended to support the perspiration, and, thereby, throw out a morbid matter: which was a very unlucky thought in the sthenic diseases, the principal of which were peripneumony, of which we have already so often spoken; phrenitis, in which the brain was supposed to be inflamed; and the small-pox and measles; because the nature of those diseases, and the tendency of all the powers producing them, was to check the perspiration, (see No. LXI.) from the excess of their stimulus; consequently, the addition of more stimuli, by way of cure, would check it still more. But these diseases are only three out of an hundred general diseases: whereas the followers of the great man, who corrected that abuse through a fiery persecution (*ως δια πυρος*) against himself, went all into a much worse extreme. Their imitation of their master transported them into a rage to carry the plan of

XCIX. Should a person, who during the former part of his life has lived luxuriously, at an advanced age, either from intention or necessity, abate a good deal of his usual indulgence, and yet preserve some appearance of an abundance of fluids and of vigour; he must not, as is commonly done, be supposed to labour under plethora and excessive vigour; but, on the contrary, unless there be a recent and evident cause for it, which is possible, he must be held for one who labours under indirect debility; and so much the rather, if, to noxious powers already too invigorating, among which all those that fill the vessels are to be numbered, directly debilitating powers have succeeded.

promoting perspiration, by the same means, through the remaining 97 of the hundred. And they succeeded with a vengeance. For, as it is the nature of these diseases to transmit too great a quantity of fluids through the perspiratory pores, in consequence of the debility, which constitutes their cause; certainly the increase of that debility, that is to say, the increase of the cause, should increase the effect. Which it most certainly did, through all the systems that have appeared for more than a century past. “*Stulti dum fugiunt vitia, in contraria currunt.*” This is intended only as a hint, to enable our intelligent readers to understand the fuller explanation of perspiration, which will soon follow.

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In this case it is neither a debilitating or asthenic plan of cure, for that would increase the direct debility; nor a plan too sthenic, for that would increase the indirect debility, the principal cause, and, consequently, the disease; but it is a middle method, which is commonly called tonic, that should be pursued (*b*).

(*b*) The blood is made from the food, and elaborated by the powers of digestion; that is, the more nourishing food is taken in, and the more strength there is in the system to convert it into real blood, the more, and also better, blood will be produced. The quantity of blood, so produced, may go to excess, as well as every other exciting power, the principal of which it is. But the question is, when, in whom, and under what circumstances, is an overproportion of blood generated? Common sense would say, not at the beginning or the end of life, when the degree of nutriment used is far from being so considerable, as at the middle and vigorous period of life. Again, which of the two sexes is supposed most liable to generate this morbid redundancy of the vital fluid? A simple creature, aided by nothing but natural sagacity, would be apt to say, the men; both because they eat more, and, from the greater variety of the modes of promoting digestion to which they are addicted, digest better. How medical systematics would laugh at such simplicity! How contrary that would seem to mystery, their lydian stone, under which they think all wisdom

C. Since we ought to adapt the efficacy of the curative means to the degree of disease (under which, for the sake of brevity, let predisposition also be comprehended), regard should be had, in the indication of cure, to age, sex, habit, constitution, climate, soil, in fine, to the operations of all the exciting powers in general, of all the noxious ones in particular, of all the remedies, whether they have been proper or improper.

CI. The subjects of direct debility are women; persons in a state of inanition; those who have been insufficiently stimulated; those who have a delicate set of solids; those who have been accustomed to moisture, whether from the climate or soil; finally, all persons in a languid state, which has not been preceded by high excitement, arising either

wisdom so safely lodged, as to fear it would be dangerous to turn it up, and examine what was under it! What sort of habits are most liable to it? Not those, who have the greatest bulk of simple solids, whether they eat or not, much less those, who are liable to bleeding discharges, who can neither eat nor digest; but all those who eat and digest well.

from

from noxious powers, or the mode in which they may have been treated.

CII. On the contrary, the persons in whom indirect debility is prevalent are adult males ; persons of too full an habit ; persons who are over stimulated, and the diathesis is the stronger, the longer they have been over stimulated ; those who have been overheated, whether they have been wet at the time or not ; all those, in short, who, having been once vigorous, have been rendered languid either by the ordinary noxious powers, or by improper treatment, when diseased.

CIII. In the cure of indirect debility ; whatever be its degree, from whatever sort of excessive stimulus it has arisen ; little less of the stimulus, which is to be employed as the chief remedy, than that, which produced the disease, should, at first, be used ; and then less and less, till the disease is cured.

CIV. When the first part of the cure is completed, and the convalescent can use the more permanent and natural stimuli, he should gradually be confined to them, and drop the use of the more diffusible ; though if he has been in the habit of using much stimulus, he
may

may be indulged in something extraordinary in that way for some time (*i*)

CV.

(*i*) This indulgence is chiefly intended for those, who have gone to some excess in the use of the stimulus of drink, and who still, without it altogether, are not capable of taking enough of food and other durable stimuli for their support. The aim, however, of all such persons (with the exception only of those who are of an advanced age, or of those whose debility threatens to run to a certain course), should be to lay aside the daily use of drink altogether, and to indulge in occasional approaches to excess as seldom as possible. Some persons, even beyond the fiftieth year of their age, when they found they could eat and perform all their other functions with vigour, have had the resolution to abstain from all sorts of strong drink, not only with impunity, but with a most wonderful improvement of their health and vigour. Another advantage, arising from this management, is, that, whenever any disease, to which a person may be liable, (such as the gout, various affections of debility, chiefly prevalent in the alimentary canal; in a word, the diseases of either form of debility), either returns, or threatens to return; a return to the use of wine and other strong drink will become an excellent remedy, and even supersede the use of high diffusible ones. That practice would be attended with this further advantage, that, when the occasion that called for it was over, and the disease prevented or removed, the person might again lay aside the use of drink, with all the good consequences he had formerly experienced from the practice,

CV. The cure of the hurtful effect of any stimulus should first be set about by changing it for a less; this for a still less; and the intention of cure should be always to pass from the use of the more violent and diffusable, which nature in her healthy state rejects, to that of the more durable, and more suitable to nature when unoppressed, till the healthy state can at last be maintained by the usual means (*k*).

CVI. In the case of indirect debility, where the view is to restore vigour, a debilitating plan of cure should be avoided; because no sort of debility is to be cured by another, or any degree of it by any degree of another kind. It is only in the progress to indirect debility (*l*), that directly debilitating powers

practice, and thereby both prolong his life, improve his health, and enjoy the proper and vigorous use of all his functions.

(*k*) In many diseases of debility arising from a former excess, the stimulant effects of which have passed away, the use of cold water, though in gratification of the patient's craving, and of other thin potions, as well as of vegetable aliment in a fluid form, and of evacuation of every kind, is most hurtful.

(*l*) Betwixt 40 and 70.

are

are suitable for the purpose of supporting the vigour, which is, in that case, in danger of being worn out (*m*): such as cold bathing, lowering the diet, weak drink, and a similar abatement in the use of the other stimuli.

CVII. For the cure of direct debility, we should begin with the smallest degree of stimulus, and then rise to the use of a greater

(*m*) At 65 there are only 5 degrees of vigour left, which, either by a continuance of the same excessive stimuli that produced them, or, by the addition of a degree proportioned to that effect, would be worn out. Remove some of the stimulant powers, the excess of excitement will be diminished, suppose to 60; remove more of the former, and the excess of the latter will be further diminished, till the excitement is reduced to its natural healthy standard of 40. The state of excitement, then, within this range, that is, between 40 and 70, especially in proportion to the approach of the excess to 70, is that, to which only directly debilitating powers should be applied. In all cases above 70 where the excitement is gone, and below 40 where it constantly decreases all the way, till it is lost at 0, directly debilitating powers are pernicious. How bad then must the only practice be, that we find in books and lectures, a practice transmitted from the first accounts of our profession, and which deals in the use of no other means but directly debilitating ones? Bad, indeed, must it be!

and

and greater, till the morbid abundance of excitability be gradually worn off, and health at last restored.

CVIII. When the disease arises from the want of any one stimulus, the return to its use should be gradual, and facilitated by other stimulants more powerful than itself.

CIX. Also in this part of the general method of cure, debilitating, either directly or indirectly, should be avoided; both for the reason formerly given, and also, because the stimulant plan of cure, which is the only proper one, when carried to excess, converts the sthenic diathesis, that between 40 and 70, into the asthenic, (between 70 and 80), and the latter into death (at 80). For which reason, while, on the one hand, debilitating powers are to be avoided; it must, on the other, not be forgotten, that the power employed in the cure should be accommodated to the degree of morbid state. The thirst, which is occasioned by debility, is increased by cold water, and hurried on to the higher symptoms of nausea and vomiting; it is quenched by pure wine, or spirit, which prevent the troublesome symptoms that would

would otherwise follow. Pure wine increases the thirst, that proceeds from a sthenic cause, and excites the same troublesome symptoms, which cold water does in the other case; cold water cures it, and prevents the future disorder.

CX. Since, therefore, the same powers excite all the phenomena of life, and produce sometimes an excess, sometimes a just proportion, sometimes a deficiency, of vigour, according to the various degrees in which they are applied; and since the same observation extends to the same powers, when they are applied as remedies of diseases; let it be a general rule, never unguardedly to convert either diathesis into the other. And, as every disease, that debilitating powers remove, is sthenic, every one, that is cured by stimulant means, asthenic; the knowledge of this may furnish the proper means of caution against mistake.

T H E

S E C O N D P A R T.

C H A P. I.

Of the noxious powers, which produce either diathesis, sthenic, or asthenic.

CXI. THE powers producing the state of the body, upon which the predispositions to sthenic or asthenic diseases, as well as those diseases themselves, depend—in other words, the powers producing both the sthenic and asthenic diathesis—were enumerated before (XI. XII.).

The noxious powers producing both diatheses.

HEAT stimulates the whole system—particularly the surface—Hence the inflammation in phlegmasiæ is always external—and perspiration from the strong contraction of the small vessels of the skin is checked or suppressed

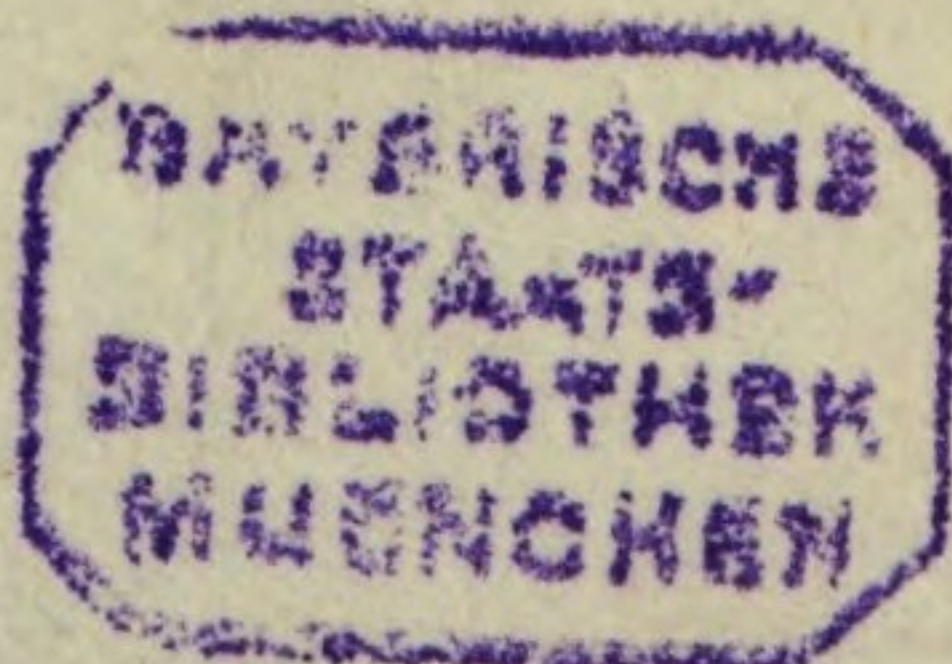
pressed—Hence contagious matter is detained—EXCESSIVE HEAT debilitates—particularly the cutaneous vessels—How it checks perspiration in asthenic diseases—COLD debilitates—Identity of operation of other debilitating powers—excessive heat, and cold, debilitate by producing painful sensation—Cold never useful but in sthenic diseases—Does not condense the living solids—Phenomena it produces by stopping the waste of excitability—Cold affects the surface most—MOISTURE—No food can be too stimulating, except flesh of land-animals—Seasoning—Spirituous liquors—Diffusible stimuli—Scale—Direct and indirect stimulus of food—Of vegetable food—How diffusible stimuli produce debility—Of plethora—Muscular exertion—Of penury of blood—Of discharges of blood, falsely called hemorrhages—Secreted fluids in too great quantity stimulate—In too small debilitate—exertion and inertness of intellect—Effect of the passions—Of air—Powers applied singly seldom produce diathesis.

CXII. HEAT, which is necessary to the production, the growth, and the vigour of animals

animals and vegetables, as also to the form of the elements (*a*), from its action upon the surface of the animal body, directly stimulates the whole; an effect which it also exerts upon vegetables. To this action of heat there is no exception while it keeps within a certain range; but when it is either deficient, where it takes the name of cold, or excessive, its effect varies. This stimulus, when moderate, produces its due effect; in an higher degree it produces more or less of sthenic diathesis.

CXIII. But as the action of heat is somewhat more exerted upon the surface than in the internal parts, where the temperature is nearly stationary, it stimulates the former more than the latter. Hence, in the phlegmasiæ (diseases with inflammation of a part) the inflammation is always external.—This agent increases the tone of all the muscular fibres, and consequently their density (see Chap. V.): which produces a suppression of

(*a*) In a certain degree of diminished heat water freezes; but if such a diminution of it could be found as to freeze air, the whole fabric of the universe would rush into dissolution.



perspiration, by some imputed to constriction from cold, by others to constriction from spasms; both erroneously. Hence, as the diameters of all the vessels are diminished, so those of the extreme vessels every where, and especially of the skin, where the cause is more powerfully exerted, are often entirely effaced. But this entire suppression of the perspiration is incompatible with predisposition, and arises only from the diathesis, when it extends to the just measure of disease. The perspiration is diminished during the predisposition; but the condensing power is not sufficient to suppress it, till it attains the degree of producing the disease.

CXIV. Hence in the measles and small pox, the irritating matter, together with the perspiration, is detained. And not only in these, but all other sthenic diseases, is the perspiration suppressed, the excitement both upon the surface and in the rest of the body increased, and catarrh in particular induced (*b*).

CXV. Heat

(*b*) Calefacients, or heating things, were one of the means that the alexipharmic physicians employed to force

CXV. Heat in excess, whether the excess arise from long application or intensity, constantly debilitates, by diminishing the tone, and producing laxity instead of density. This effect is somewhat greater upon the skin, to which the direct energy of heat is applied, than in the interior parts, in which there is little change of temperature. Hence arises sweating as in the torrid zone; hence the diameters of all the vessels, and particularly of the perspiratory vessels, are enlarged. Hence proceed the colliquative sweats in fevers, and a similar state of the bowels. Hence, also, corruption of the fluids, and not from any change immediately produced

force perspiration; but the principle is now laid down, that shows they produce the opposite effect. Hence the merit of Dr. Sydenham in recommending cold, both in the small pox and in peripneumony, in which disease he took his patients out of bed, and placed them in an easy chair. Happy had it been for the profession, and happier for the sick, had he extended his improvement to the measles and catarrh, and all the rest of the few sthenic diseases, and stopt there; but by extending his antiphlogistic and refrigerant doctrine to the whole form of asthenic diseases, the harm and good he did were in the proportion of 97 of the former to 3 of the latter.

by corrupting or putrefactive powers. The idea of certain powers having a tendency to corrupt our fluids, and of certain others to correct that effect, and take off the degeneracy, long prevailed in the minds of systematics, and is not among many of their followers yet laid aside. Heat was one of the number; but that it acts so, is disproved, not only by the explanation here given, but by the certainty of the fact, that the same effect is produced by cold, as well as every other debilitating power.

CXVI. Excessive heat in the violent measles, in the confluent small pox, in fevers, and in every kind of asthenic disease, in which the perspiration is checked, does not lessen the deficiency, though it expands and enlarges the vessels, but, on the contrary, increases it; *i. e.* diminishes perspiration.

CXVII. Cold, a power unfriendly to animals, vegetables, and the elements, weakens the whole system, but the surface most, of which almost alone it diminishes the temperature. It produces this effect by a direct operation, always in proportion to its degree. Cold, equally with excessive heat, produces
atony

atony and laxity of the vessels, gangrene, and the other effects of excessive heat. In Siberia the phenomena of cold on the human body very much resemble those of heat.

CXVIII. That these effects of the extremes of temperature arise from their debilitating, not from their generating putrefaction—from an affection of the excitement, not of the fluids—plainly appears from this; that other exciting noxious powers, such as fasting, over-abundance of blood (as in the case of those who die of peripneumony), and similar noxious powers, which neither have been, nor can be, supposed to affect the fluids by any direct operation (*c*), produce corruption

(*c*) Fasting, acids, and cold, have all the same effects upon the fluids that the putrefying substances were supposed to have; but surely acids produce no putrefactive process; neither can want act as positive matter; nor cold be supposed to produce any such effect. In a word, any corruption that is produced, arises only from the weakness of the heart and arteries, predominant in their extremities. They cease to act; the fluids within stagnate, and, under the heat of the body, degenerate. This is the true cause of the corruption. And the remedies are not correctors of the corrupted mass; but

tion of the fluids, and all the other symptoms; and the same stimulants, which remove the latter, remove the former. Nay, the supposed antiseptics, such as wine, peruvian bark, acids, and other things of that kind, either have no such property under any circumstances; or they neither are given, nor can be given, in such quantity, as to affect the composition of the fluids: In fine, the effects of inanimate matters upon one another can never, with any propriety, be transferred to living systems. Though, then, the fluids are frequently corrupted, the corruption is the effect of weakness of the vessels, which prevents them from being sufficiently mixed and diffused, but it is never the original cause of disease.

CXIX. The disagreeable sensation both
whatever invigorates the whole body, and consequently the heart and arteries. Nothing can be more absurd than to suppose that a glass or two of wine and water, a little bark, and so on, after being blended in the whole mass of fluids, should go to a portion of fluids in the extreme vessels, even without the circulation, and, by mixing with it, change its qualities.

from

from cold and heat in extreme, is also hurtful, by diminishing the sum total of stimulant operation, which, in so far as it is agreeable, is serviceable by stimulating. (See note (*d*) in par. XXI.)

CXX. As cold is naturally so debilitating, and as all debilitating powers diminish excitement, it can never be of service but in sthenic diseases, that is, in those which are in their progress towards indirect debility (see CVI.); because the excitability, already too abundant, can never be rendered more abundant, or, when too much wasted, be more accumulated, without an aggravation of the disease (XLVI. XLVII.); excitability admitting of less stimulus in proportion as it is either more abundant, or more ultimately wasted (*d*). When the debility is moderate, a mistake of this kind is less evident: but in a high degree of debility of either sort, a violent disease, or even death it-

(*d*) This obscure phrase, *more ultimately wasted*, has nothing answering to it in the original latin. It seems quite inconsistent with XXVI. and the other passages referred to, EDITOR.

self, may be the consequence of the smallest increase of debility (*e*).

CXXI. As cold as well as excessive heat relaxes, as is seen in the cure of the small pox, and of every isthenic disease, we learn, that the property of cold to condense inanimate matter does not extend to living mat-

(*e*) When the debility of the direct kind is very moderate, that is, the excitement has not sunk much below 40 in the scale, the short suspension of a few degrees more would not do much mischief. Suppose the excitement at 30 instead of 40, and a dip in cold water has brought it down to 25, the effect even of that is not of a trifling nature; the debility by this means has passed the whole range of predisposition, and arrived at the degree where disease commences. It is true the excitement will rise the moment the person is taken out of the bath; but still something is lost. The very accumulation implies a reduced disposition in it to be acted upon by stimuli. A person, who has abstained from any one stimulus for a given time, when it is again applied, will not bear near so much of it as he did formerly. If he abstains longer, he will bear still less, till, at last, he will be fit to bear none at all. If, on the other hand, the excitement should have fallen to 10, an addition of debilitating power would be attended with the utmost danger, not only of increasing the disease, but of inducing death.

ter.

ter (*f*). The diminution of the bulk of the surface, or the shrivelling of the skin, arises from debility of the arteries, which do not propel the fluids with sufficient force to distend the small vessels of the skin. In this way cold produces asthenic diathesis.

CXXII. But, as always less and less excitement arises in proportion as stimulant operation has been applied, till at last it ceases altogether; cold, as well as any other directly debilitating power, may, at some degree, produce health and all the degrees of sthenic diathesis (*g*); in the following way, however, only. It stops the waste of excitability, makes the body more susceptible of stimulant operation, checks the progress to indirect debility, and stems the latter. But it only affects this by checking the effect of

(*f*) It has been alleged, that the diminution of the bulk of the body by cold, furnished an argument in favour of its being an astringent to it, as it certainly is a condenser of dead matter.

(*g*) From the highest to the lowest, from that degree of it, which, under the circumstances here mentioned, produces a moderate catarrh, to that, where the modification of its action rises to the degree of being adequate to the effect of producing a peripneumony.

heat

heat and other stimuli, which accelerate indirect debility, and by keeping the excitement within the bounds of vigour. Hence vigour in cold countries, when the body is defended by clothes, the shelter of a house, the warmth of a fire, as well as by its own proper motion. Hence also the bracing, by cold, of parts that have been relaxed by excessive heat. Lastly, hence a remedy for the corruption of the fluids, which consists in invigorating the vessels, not in correcting the degeneracy of their contents. This effect of cold upon the surface, which is nearly the only part of the system subject to refrigeration, is somewhat greater than on the internal parts (*b*).

(*b*) This account of the salutary operation of cold is not complete, even according to the author's own principles. For as disagreeable sensation, in his opinion, debilitates, cold may very often be so applied as by removing the very disagreeable sense of heat, that attends some diseases, to produce an effect equivalent to stimulation. It is, I believe, exactly in this way that bathing the body with cold water proves serviceable in low fevers.—One great defect of this system is the omission of the actions produced by painful and pleasurable sensation. EDITOR.

CXXIII. The

CXXIII. The debilitating effect of temperature, and therefore also its hurtful tendency, is increased by moisture.

CXXIV. Of the articles of diet, the only food in danger of being too stimulant, is the flesh of land-animals, used in great quantity. Meat too salt, and hardened, especially when it has now begun to spoil, is an exception.

CXXV. The same observation applies to condiment; of which a very small portion, upon account of its high degree of stimulus, is sufficient.

CXXVI. Spirituous or vinous liquors, in which the alcohol is always diluted, stimulates more quickly than seasoned food; its stimulus is in proportion to the quantity of alcohol that it contains.

o. But there are stimuli, which possess an operation as much quicker, and more powerful, than that of the articles of diet, which are the agreeable and proper stimuli in health, as their operation is of shorter duration. To these the name of *diffusible* may be given. They rank above strong liquors in the following order:

π. Next to these liquors, and immediately
above

above them, stands musk ; above it volatile alkali ; higher than this æther ; and the highest of all, as far as experiments have yet thrown light upon the subject, is opium (*i*).

9. These, according to their degree, possess the property of converting the asthenic diathesis into a cessation of all diathesis, or of restoring health ; of carrying health into sthenic diathesis, the sthenic diathesis into indirect debility, and the last into death ; which they accomplish with so much the more ease and promptitude, as they are more powerful than all other stimuli.—In the use of the diffusible stimuli great care should be taken to apply them only to the cases that require them ; which are only the diseases of the highest debility, or of which the intolerable pain, besides tormenting the patient, threatens the worst consequences,

(*i*) We are pretty certain of the exactness of that place in the scale which we have assigned to opium. Nor is our arrangement of the others uncountenanced by the same kind of criterion ; but having not yet made all the trial necessary to establish the proposition, we defer any final decision of this point to an after opportunity.

CXXVII. The

CXXVII. The stimulus of the articles of diet, not exclusive of the diffusible stimuli, should be denominated *direct*, because it acts directly and immediately upon the excitability of the part to which it is applied. Direct stimulus, at least in so far as it regards the food, is assisted by another stimulus, depending upon a distention of the muscular fibres, on which account, for the sake of distinction, the latter should be called *indirect*. The latter is owing to the bulk of animal and vegetable food; the former is produced by a relation or affinity of the stimulus to the excitability. The indirect acts upon the living solids in so far as they are to be considered as simple; the direct acts upon them as living only. From a long and habitual excess in food and drink, at last indirect debility arises, and the group of diseases depending upon it (*k*).

§. All

(*k*) When I make a meal of animal food, much less bulk is requisite to give the same nourishment, than when vegetable matter is the only one made use of. What makes the difference is, that there is something in the animal matter which affords a nourishing stimulus indepen-

5. All these stimuli have also a tendency to produce asthenic diathesis.

CXXVIII. Vegetable food taken in whatever quantity, and too sparing an use of animal, as also meat too salt, and deprived of its native juices by keeping, when at the same time better nourishing matter is withheld, constantly weakens, and thereby produces asthenic diathesis through all its degrees. Hence arises that remarkable imbecility both of body and mind, which distinguishes the Gentoos, who follow the brahminical ceremonial of religion. Hence the diseases of the poor every where (1); hence scrofula fevers

independent of its bulk; and though the vegetable matter is not altogether devoid of that kind of stimulus, it, however, possesses it in a much smaller degree. Both stimuli are necessary, but chiefly the direct, by which animal food chiefly acts; and therefore is the vegetable the worst and weakest sort of aliment, because it chiefly acts by its bulk of matter. A small portion of the indirect stimulus is necessary; hence the very general use of bread. But our vigour of mind and body depends upon the direct.

(1) The nourishment of animal food needs only a little support of tension from a moderate quantity of bread; but that vegetable food, even when supported by strong

(*m*), fevers (*n*), epilepsy, cough with profuse expectoration and hemorrhage, and the whole band of asthenic diseases. The direct debility flowing from this noxious power, affects the stomach somewhat more than other equal part (Chap. IV); the consequences are loss of appetite, sickness, vomiting, very loose belly, and other disturbances of the first passages.

strong condiments, in no quantity whatever, ever gives due support, appears plainly from the instance brought in the text. Of the poor labouring people in Scotland, who chiefly live on vegetable matter, it would take three to go through the work that one Yorkshire man, nourished by bolting fat pork, can easily execute. And among the Gentoo servants a dozen is not able to perform as much work as a single English servant. A year's experience of vegetable food, and its pernicious consequences (see the Preface) has now put the question, about the supposed salutary effects of low living, and the pretended virtue of a rigid observance of it, beyond all doubt, and brought irrefragable proof of its weakening effect.

(*m*) Scrofula, though supposed hereditary, produces its worst effects, not from that circumstance, but the method of management, both for the prevention and cure.

(*n*) Various particular, and sometimes specific causes, have been assigned for the production of fevers; but it shall be proved, that, whatever debilitates in a high degree, is adequate to that effect.

†. Excess in the use of food consisting of the proper materials produces these effects, as well as improper aliment: as may be inferred from the universal effect of all the other stimulant powers, when their operation has been pushed to the same excess (*o*). The mean betwixt the extremes of the hurtful powers, in so far as diet is concerned, is abstinence (*p*).

CXXIX. Abstaining from the use of con-

(*o*) It will now appear how far an assertion of the opposers of this doctrine is just or calumnious: low living and starving are condemned for the facts and reasons assigned; but can it now be said, that the doctrine is friendly to intemperance? On the contrary, it has reduced the fact to its proper standard, reprobating the extremes, and establishing the mean under which virtue takes her post. It is certainly as immoral, or irreligious, if you will, to hurt health, and hasten death by abstinence, as by a luxurious excess. There is a gloomy luxury in superstition, a cheerful one in sensuality; both bad.

(*p*) At least it stands at the foot of the scale of directly debilitating powers, if they are to have the rank of standing uppermost, as being most hurtful, and to be followed by the enumeration of the indirectly debilitating powers, as being next so, which, by the way, is the rank that nature seems to point out for both.

diments,

diments, which, without animal food (*q*), are not sufficient to give strength, produces additional weakness.

CXXX. Neither diffusible stimuli nor spirituous liquors are necessary for the young or the vigorous; they are not even safe, on account of their tendency to produce indirect debility. In persons accustomed to strong liquors, in the old and debilitated, weak, cold, acid, and fermenting liquors have great effect in bringing on the asthenic diathesis directly, as excess in strong liquors has indirectly.

v. If the diffusible stimuli are withdrawn from persons habituated to them, the same effect follows as when the durable are withdrawn. The excitability accumulates, and direct debility comes on. Hence the diffusible stimuli may be said to produce asthenic diathesis. But asthenic diathesis is never the consequence of withdrawing them, at least in any considerable degree, but when they have been habitually used. And all the hurtful ef-

(*q*) As in the case of the Gentoos, who make use of a great deal of condiment with their vegetable aliment.

fects which they have most untruly, to the great detriment of mankind, been said rather, than are now said, to occasion, arise not from themselves, but from the want of knowledge how to manage them. And though the operation of diffusible ought to be supported by that of durable stimulus; it should not be confounded with the debilitating powers. What disturbances, during the operation of opium, will not a breath of cold air upon the body create? And how easily, as well as quickly, are they all removed, by carefully covering up the patient! As there are cases of indirect debility from an habitual abuse of strong drink, there are also others from a mistaken or intemperate use of the diffusible stimuli, particularly opium. Both of them require nicety and skill in the management of them for their cure; for which consult Chap. XI. from par. CIII. to CX. The management is out of our present question; but from this observation, we can clearly find, as it was to be expected from the analogous operation of the other exciting powers, that the diffusible stimuli, when their operation is carried to excess, will also produce

produce an asthenic diathesis of the indirect kind.

φ. Other diffusible stimuli, as well as opium, and the more durable one of strong liquor, by an indirectly debilitating operation, produce asthenic diathesis.

CXXXI. An abundance of chyle and blood is another stimulus: by this the excitement is every where increased, and particularly in the blood-vessels, in a degree proportioned to the abundance. The quality of the blood, at least, as a cause, is of no effect, it is the quantity only that is. The quantity, by distending the muscular fibres of the vessels, acts with a constant impulse (*r*). The doctrine of

12 (*r*) The blood by its quantity distends the muscular fibres of the vessels; that distention stimulates the excitability in the fibres, and produces excitement, commonly called their irritability; thus excited, the fibres contract; the contraction of each portion sends the wave onward to another portion: when the wave has passed any given portion of vessel, its fibres again relax, and make way for the next, which is pushed along in the same manner. In this way the circulation goes on in all cases while life remains; contraction and relaxation constantly alternate; the former propelling the wave before the latter

of plethora, so noted in the medical schools, is only applicable to sthenic diathesis, and takes

opens to receive the next. But the vessel may be in different states with respect to its power of either contracting or relaxing. When it is weak, which every part of the vascular system is as often as all the rest of the system is weak, both the contraction and relaxation of each portion of vessel is imperfect. The contraction from its smallness, and the relaxation from its being more owing to the passive state of the simple, than the active state of the living, fibres, leave betwixt them a large diameter upon the whole. But, in a vigorous, or sthenic, state of the whole system in general, and of that of the vessels in particular, the contractions are strong and forcible, and the relaxations active and in consent with the contractions. Hence the diameter of each portion of vessel is diminished upon the whole, and while the quantity of the blood is at the same time increased, the action and re-action are great; the blood distends with mechanical, the vessels resist with vital energy; the mutual effect of both upon the excitability is considerable; all is activity, all is force, and these are in exact proportion to their cause over all the sthenic diathesis. This state of the vessel, in so far as it respects the muscular fibres, is its tone; in so far as it respects them as simple solids, its density. It is a sthenic state of the vessel, opposed to the asthenic first described, which is distinguished by the epithets of atony and laxity; which, however, opposed to tone and density are only

takes place in proportion to its degree (s).

CXXXII. The effect of distention is increased by the velocity of the blood, both as arising from other sources, and especially from muscular motion, a motion, which, by compressing the veins, carries the blood more quickly back to the heart.

CXXXIII. Nothing is more effectual than these two last mentioned stimuli, in producing sthenic diathesis, and the diseases depending upon it. These diseases are violent in proportion to the over-proportion of the blood, and the rapidity of the force with which it flows; a fact, that is proved by all the exciting powers, all the symptoms of those diseases, and, especially, the pulse; it is also proved by the great efficacy of bleeding, purging, abstinence

only relative terms, employed for convenience, not absolute; like the term cold, used for diminished heat, they only signify a diminution of tone and density.

(s) It is a curious fact, that, while the truth of this proposition is demonstrated, the plethora of the schools is only understood of a state of the vessels diametrically opposite to a just idea of plethora.

from food, and rest, in the cure of the disease (*t*).

CXXXIV. While an over-proportion and velocity of blood is a chief cause of sthenic diathesis; there is nothing more powerful in producing the asthenic, than that penury of blood which the greatest celerity of motion accompanies. Hence, the smallness, weakness, and quickness of the pulse: Hence the excitement is diminished every where, and, in preference to other equal parts, in the whole sanguiferous system, and that in exact proportion to the penury.

χ. From this state of the vessels, arises the discharge of blood from the lungs, from the uterus, from the anus, or around the anus, from the urinary passages, and through the perspiratory pores. Hence arise disturbances of the stomach, want of appetite, loathing of

(*t*) Relief from bleeding and other evacuations is certainly a good argument for the cause of the disease being so far owing to an over-proportion of blood; and rest is as good for the proof of agitation of the vessels being concerned in the cause: besides, exercise is otherwise a noted cause of quickness of the pulse: and the hurtful powers and symptoms are equally decisive.

food,

food, and, therefore, upon account of want of nourishment, and the languor of the digestive organs, always less and less blood arises in the system. So great a penury of blood is the principal origin of bleeding diseases; which never happen but in the asthenic state. The same penury of blood acts in this manner, chiefly affecting its own vessels, because, according to a law so often mentioned, its debilitating energy chiefly falls upon them. In sthenic diseases, that have advanced to their height, or a little beyond it, a few drops of blood from the nose, or a dropping of blood from the same, or any other part, demonstrate only a predisposition to indirect debility, but not an establishment of it, and that the matter still remains within the operation of excessive stimulus (u)

ψ. Thus

(u) Who ever heard of a flood of blood coming from the lungs in a peripneumony? Or, who has not heard of it in consumptive cases; which are the diseases depending upon the laxity of vessels of which we are speaking. What vigorous woman, sound in all her functions as a woman, ever fell into perpetual floodings? What had been the state of these women before the disease? Did they eat and digest so completely, as that there was any

ψ. Thus it is not an excess in the quantity of blood, but laxity and atony of vessels from its

reason for supposing their vessels were filled with blood? No; long before the arrival of the disease their appetite was puny, and, considering the kind of matter they made use of, to wit, vegetable, it was not to be supposed more beneficial from its quality than its quantity. What was the idea to be gathered from their symptoms, and particularly the pulse? The pulse had all the marks of an asthenic one; being weak, small, and quick, like that of a new-born infant. What was the state of their habit? Was it vigorous and robust? It was the reverse; soft, delicate; the habit lax; a falling off in flesh, with weakness over the whole system, and total loss of appetite. What were the remedies employed to remove this supposed offspring of plethora? Bleedings, repeated without end; other evacuations with the same freedom; vegetable food in a fluid form; and a horizontal posture, with their head lower than their body and under-extremities. Miserable are the resources of ignorance, and contemptible their execution! Fill a rigid tube, open at both ends, full of water, and the fluid, no doubt, will run out at the end which is most below an exact horizontal position. But that is not the case with the fluids in living vessels. The excitement, distinguishing them from all rigid inanimate tubes, counteracts the effect of gravity, while its living state remains: In proportion to the degree of which, the sides of the vessel will embrace their column of fluids, and prevent the
flowing

its deficiency, that upholds the bleeding discharges; which proceed in their course, not with any effort or active impulse, but a diminution of tone: They are all asthenic, and the asthenic diathesis, as far as it depends upon them, consists in direct debility.

ω. But, as every other exciting noxious power may induce indirect debility, so also, may an over-proportion of blood. For the vessels, distended beyond all bounds, may, by the excess of that stimulus, exhaust their own excitability, and, thereby, put an end to their excitement. Upon which the forcible contractions are converted into languid ones, or

flowing out of the fluids, in proportion to the degree of excitement; and before the gravity can act, the excitement must be extinguished, and the living system reduced to a lumpish mass of dead matter. It is the latter that enables them to produce that effect. And, therefore, bleeding discharges can never happen, either in health or sthenic diathesis, unless in that very high degree of it that approaches to indirect debility, and even then, only in the forced, scanty, manner described in the text; whereas, after the establishment of indirect debility, or in the case of direct, the great discharges only can happen, and that without force, in great plenty, but still short of what would happen if no excitement restrained it.

such

such as can scarce be called contractions at all; and the area formerly effaced becomes extremely patulous. The finer parts of the fluids flow through the patulous extremities of the arteries, wherever they find an out-let, and carry with them, sometimes serum, sometimes red blood.

In the asthenic diathesis, as well as the sthenic, it is not the quality of the blood, but its quantity, which is prejudicial, and the fault in quantity here is deficiency. The deficient quantity produces the symptoms of the pulse described above, by not sufficiently distending the vessels, and giving them sufficient excitement. Plethora, which has been thought to belong to this form of diseases only, has absolutely no existence in it. The state of the vessels, with respect to the quantity of blood in them, that is pleasant and suitable to health, is the mean betwixt the extremes that have been described.

CXXXV. This state of the blood and vessels, that is, penury of blood, and atony and laxity of the vessels, chiefly from direct, sometimes from indirect debility; though the latter case is exceedingly rare, is the chief origin

gin of asthenic diseases; of this the very hurtful effects of evacuation, especially bleeding, as well as vomiting, purging, and every other mode of diminishing the bulk and quantity of fluids give full proof. This proof has of late received a further confirmation, in the singular success of the cure by other stimulants first, and then by every mode of filling the system (x).

CXXXVI. The different fluids, secreted from the blood, are, by the distention which they give to their respective vessels, also understood to stimulate. In this respect the milk and semen, by the abundance of each in its respective vessels, and likewise the perspirable fluid, are the most remarkable. The

(x) Systematics allow that there are many diseases, which are a reproach to their art, from their never yielding to their method of cure, but on the contrary, becoming worse and worse in proportion to the time and pains taken about it. Of these *opprobria medicinae* (it would be better, I believe, to call them *opprobria medicorum*) few are more so than the bleeding diseases; which seem uniformly to have proceeded from evil to worse under the evacuant debilitating plan; while it has now been found, that the high stimulant plan removes them with the greatest success.

com-

commotion of the secretory organ (*y*) is easily diffused by means of the excitability, which is one undivided property, over the whole body, and, when it rises to excess, is capable, with other powers that communicate an excess of excitement, of producing sthenic diathesis.

CXXXVII. The same secreted fluids, when they do not sufficiently distend their respective vessels, when they do not communicate enough of excitement, make no inconsiderable part of the hurtful powers, that constitute asthenic diathesis.

A. For which reason vomiting, purging, and every other evacuation, are powerful inducers of asthenic diathesis, which they effect in proportion to the debility that attends their operation. The same thing is to be said of

(*y*) It has been said above, in chap. 4, that the excitability is one uniform undivided property over the whole living system; and that, wherever it is acted upon in any part of its seat, it is affected over all. This fact, which is strictly true and universal over every part of living matter in nature, with the utmost ease explains many things, that were confessedly inexplicable upon every other medical doctrine; and, among the rest, the several affections of the secretory system.

excess

excess in venery, which is partly an indirect, partly a direct, always a great, debilitating power (z).

B. Sometimes the secretory vessels seem crammed with a colluvies of fluids, capable of producing indirect debility, as in that overflowing of bile, which distinguishes the yellow fever of the torrid zone (a). Here too the

(z) Nothing is more effectual in hastening death than a love marriage betwixt an old man of worn out excitability, and a young beautiful virgin: I need not explain to any reader on which side, that of the man or the wife, either the love or the danger lies.

(a) I have been so often, and by persons of good sense enough to make just observations, informed of the necessity of purging off the redundancy of that fluid, which not only fills the intestines, but diffuses itself over the whole alimentary canal; and, then, of following out the cure of the disease by the use of wine, spirits, and the diffusible stimuli, that I have, though at first with some reluctance, admitted the fact. The reason of the slowness of my assent to it was, that, upon every other occasion of any accumulation of matter in the first passages, even in the colic itself, I had always found the practice of invigorating the peristaltic motion, by stimulants, sufficient to clear away all such extraneous matter; while vomiting and purging, by their relaxing effect upon the vessels, served to generate more, and

the debilitating effect tends, by means of the excitability, to diffuse the diathesis over the whole system.

From this source arise, a languid action of the extreme vessels (*b*), a slow motion of the fluids, lastly a stagnation and corruption of them. The diminution, or temporary destruction of excitement, over so considerable
a part

and increase the cause of the disease, which is always debility: This I found not an exception to that general principle, but an instance of a sort of local disease, from an over-repletion of the exhalant mucous and biliary vessels.

(*b*) These are the exhalants that pour out the saline, watery part of the blood unchanged; the mucous glands that change, by their secretory operation, the fluid they receive from the blood; the pori biliarii that change the fluid that they receive from the extremities of the veins of the gate, and of the hepatic artery, or artery of the liver; the little ducts which these form by the union of numbers into single vessels; the hepatic duct or great biliary vessel of the liver, which receives the bile from all the ducts; and, lastly, the ductus communis choledochus, or the duct that may be denominated in English, the general receiver of all the bile, whether from the great duct of the liver, or that which sends to the gall-bladder a part of the bile that returns in the same vessel to the general receiver. These, and besides them, the
inhalants

a part of the system (*c*), communicates debility, by means also of the excitability, to the rest of the body; and, in conjunction with other noxious powers that produce too little excitement, gives rise to the asthenic diathesis.

Γ. The various sorts of gestation, as riding on horseback, going in a carriage, using an hobby, and sailing, as also of exercise and labour, by rousing the muscles into contraction, and thereby accelerating the motion of the blood in the veins toward the heart, while the valves prevent its taking a contrary direction, greatly promote excitement in all the vessels, and, therefore, over

inhalants or absorbents as they are called, to wit, the small vessels that take up from the exhalants and other arterial terminations of vessels, the fluid, called lymph, which is once more to be returned into the circulation; are the vessels that suffer the concurrence of symptoms described in the text.

(*c*) How great the space in the whole system is that these vessels occupy, may be easily imagined, when it is considered, that every evanescent artery, over the whole body, terminates in one or more of these colourless vessels that have been described.

the

the whole system; and the effect may go so far as to produce sthenic diathesis (*d*).

Δ. As nothing contributes more to health than moderate and frequent exercise, and as its excess acts in the manner just described, a degree, either greater or less than the salutary degree, will produce the asthenic diathesis; the former by wasting the excitability, the latter by withholding a necessary stimulus; that is, the one by debilitating indirectly, the other directly.

CXXXVIII. Thinking, which more immediately affects the brain, than any other equal part of the system, encreases excitement over the whole body (*d*). Intense thinking

(*d*) Too undistinguishing again! These kinds of gestation are well known often to produce general languor; and even the symptoms of debility. So does swinging, especially circular swinging, or *twirling*. So, I believe, does walking at a certain slow rate, or *sauntering*; by which I have found the force of the circulation to be much diminished. EDITOR.

(*d*) None of the exciting powers have more influence upon our activity than the two which are just going to be mentioned, the exercise of our intellectual function, and

thinking, whether for once in a great degree, or often repeated in a less degree, or habitual, may alone prove hurtful; but, in conjunction with other powers also hurtful from

and that of passion or emotion. With respect to the former, Homer observes of the hero, whom he gives for a pattern of eloquence, that upon his first address, that is while he was under some agitation, and had not yet gotten into his train of thought, he was awkward in every motion, and in his whole attitude; he looked down to the ground, his hands hung straight along his sides as if powerless; his whole appearance was torpid. But when he once entered upon his subject, his eyes were all fire, his limbs all motion, with force, grace, and energy. Upon commencing a lecture, the pupils have often observed the same torpor in the lecturer, and a similar vivacity and life in a few minutes, when he had gotten fairly into his subject: the report which a lecturer's daughter, upon looking through the hole of a door, while the lecture was going on, made to the family and some company then present, was, that her father looked, in his lecture, as if he would look through his hearers. Mr. Donaldson is one of the few great masters, in the art of painting, who never fail, with a most exact likeness, to display the whole influence of the mind upon the features. A miniature of the author, done by him, as a present, is reckoned the greatest master-piece in these respects, that ever came from the hands of a painter.

their excess of stimulus, becomes more so, and may produce sthenic diathesis.

CXXXIX. An evident cause of asthenic diathesis is that state of the intellectual function, in which excess in thinking, by wasting the excitability, ends in indirect debility; or that deficient, weak, vacant state of mind, incapable of keeping up a train of thought, which produces the same hurtful effect by direct debility. This faulty state of the mind contributes greatly to weaken the system (*f*).

CXL. Violent passions, as great anger, keen grief, unbridled joy, rising to such a pitch as to destroy excitability, have the same effect as excessive thinking, and admit exactly of the same reasoning.

CXLI. Passion so strong as to exhaust the excitability induces that asthenic diathesis, which is occasioned by indirect debility, and diseases of that stamp. Hence epilepsy,

(*f*) It may often be remarked by physicians, that their patients, after every other proper part of cure has been executed, are never completely restored to their healthy state, till they are again engaged in their usual occupations both of mind and body.

hence

hence apoplexy, which, when the mind has been screwed up to the highest pitch of passion, often proves fatal.

CXLII. On the contrary, deficiency of passion, (as in melancholy, grief, fear, terroure, despair, which are only lower degrees of joy, assurance, and hope, and imply only a privation of the exciting passions, and are by no means positive emotions of a contrary nature) tend to produce that asthenic diathesis, which depends upon direct debility. The immediate consequence is loss of appetite, loathing of food, sickness, vomiting, pain of the stomach, diarrhœa without pain, or with pain, indigestion, colic, the gout, and fever.

CXLIII. The exercise of the senses, when it is agreeable, has great effect in exciting the whole body, and in producing emotions, which, together with the noxious powers mentioned above, may easily produce sthenic diathesis. These emotions are felt in drinking, dancing, in agreeable entertainments, where the eye is dazzled with the splendour of the dishes, of the company, and of all the objects around.

CXLIV. The exercise of the senses, when excessive, produces indirect debility. On the contrary, when the senses are either in part destroyed, or impaired, or disagreeably affected (*g*), the mind is dejected, and the whole body thrown into a state of languor and direct debility. In both cases, especially when there is a concurrence of other debilitating powers, the asthenic diathesis arises.

CXLV. The effect of the air, independently of its sensible qualities, and its use in supporting respiration, is less obvious, than that of the other powers that have been spoken of; at the same time it cannot be doubted, that its application to the whole surface of the body is a necessary stimulus. The air is seldom applied in a pure state: it is commonly blended with foreign matters that diminish its stimulating power; and, though its salutary stimulus depends upon its purity, it is

(*g*) Nothing is more clearly disagreeable than an obscure light, as when one reads with a small or unsnuffed candle. Hence the luxury of more candles than one, or of wax or spermaceti candles. This is often experienced at Ranelagh, and may be seen in children exquisitely amused.

uncertain

uncertain whether ever its purity goes so far as to stimulate in excess, and thereby produce sthenic diathesis. The lately invented balloons, by which men ascend above the clouds, would throw much light upon this matter, if it were not for the cold of the upper regions of the atmosphere. Be that as it may; since we live commodiously enough, without air of the greatest purity, too pure an air has probably a tendency to produce sthenic diathesis, by stimulating in excess.

CXLVI. But, as nothing is more common than impure air, and as every impurity diminishes its stimulus, a very impure air without doubt debilitates, and produces asthenic diathesis. Accordingly, impure air is a frequent cause of typhus, as is evident from the fate of those who died in the black hole of Calcutta (*b*). Whether ever the air, from

(*b*) Is it so certain that these people died of typhus? I hope to elucidate this question soon by experiment. In the mean time I may refer the reader to a case, in which the inspiration of oxygene air produced exactly the same violent effects as opium had done. The circumstances of the patient rendered it absolutely certain

from an excess of purity, produces asthenic diathesis, is the more doubtful, because, as has been said, it is as yet undecided whether it produces sthenic diathesis or not.

E. Contagious matter, in so far as it may have any tendency to produce general diseases, in one form produces sthenic, in another asthenic diseases, and, therefore, acts like the ordinary noxious powers, and admits of exactly the same reasoning. But, in so far as it only occasions eruption, without making any change in the excitement, it is to be referred to the local diseases.

Z. To poisons, if they act as general stimulants, all the reasoning that has been employed with respect to the other noxious powers, will apply. It is not, however, likely that they are general stimulants.

CXLVII. It is seldom by the separate, almost always by the united, operation of all

that he had taken very little wine or other stimulants, indeed less than usual. This case would have been the occasion of great triumph to Dr. Brown, had he lived to read it. See a case of epileptic affection in *Letters from different physicians to Dr. Beddoes*. The case is singular in degree, but not in kind. EDITOR.

the

the powers, that both the diatheses, whether they remain within the range of predisposition, or rise to the degree of actual morbid state, are produced, and by no inherent power in the system.

C H A P. II.

The cause of each diathesis—Sthenic from too great—asthenic from too little excitement.

CXLVIII. THE cause of sthenic diathesis is too great an excitement of the whole living system by the powers above-mentioned. All the functions are first increased, a disturbance or irregularity then takes place in some, others are impaired; but not, as long as this diathesis lasts, by a debilitating operation.

CXLIX. The cause of the asthenic diathesis, arising from the debilitating noxious powers, is too little excitement of the whole living system, impairing all the functions, disturbing some, giving a false appearance of increasing others, but always debilitating. It must now appear to the reader, to what simplicity the hitherto conjectural, incoherent, erroneous, mysterious, and enigmatical art of physic, is reduced. It has been demonstrated, that there are only two forms of
of

of diseases ; that the deviation from the state of health, in which the morbid state consists, is not either repletion or inanition; or changes in the qualities of the fluids, whether of an acid or alkaline nature; or the introduction of foreign matters into the system; or a change of figure of the extreme particles, or a disproportion in the distribution of the blood; or an increase or decrease of the power of the heart and vessels as regulating the circulation; or a rational principle governing the actions of the body; or an alteration in the extreme particles, as being of too large or too small a size; or an alteration of the pores, as being too narrow or too capacious; or a constriction of the superficial vessels from cold; or a spasm of these vessels, producing a reaction, as it is called, of the heart and interior vessels; or any thing that any person has yet thought of respecting the cause and nature of morbid state. On the contrary, it has been proved that health and disease are the same state depending on the same cause, that is, excitement, varying only in degree; and that the powers producing both are the same, sometimes acting with

with a proper degree of force, at other times either with too much or too little; that the whole and sole province of a physician is not to look for morbid states and remedies which have no existence, but to consider the deviation of excitement from the healthy standard, in order to remove it by the proper means. The reasoning part of this doctrine, it is expected, the reader will find irreprehensible and unanswerable; and the practical part, from the astonishing cures that have upon innumerable occasions been effected, will ever stand in support of the truth and utility, as well as simplicity of the whole.

C H A P. III.

The sthenic diathesis—Increase of all the functions previous to the disturbance of the functions.

CL. PREVIOUS to the disturbance of the functions, which the hurtful effects of both sets of powers produce, and which never happens till after the formation of disease (*a*), and even then only when the attack

(*a*) During the predisposition to peripneumony, as well as to every other disease, neither the symptoms of disturbance, or any other symptoms at all appear. And in mild cases, such as catarrh, the symptoms of disturbance occur not through the whole course of the disease: But when a disease is, like the peripneumony or the gout, of a violent nature, then the system is commonly disturbed, and in a most conspicuous degree. The affection of the lungs in the former, from the inflammation within, and of one of the feet, or some other part in the latter, from an external inflammation, give extreme disturbance to the affected parts, while there is a disease of the same nature as the gout, that is dyspepsia, or indigestion, in which the inflammation never appears.

is

is violent, all the senses are acute, the motions both voluntary and involuntary (*b*) are vigorous, there is an acuteness of genius, great sensibility, and tendency to passion and emotion. The several parts of the body are perceived to be in a state of vigour from the following marks; the heart and arteries from the pulse; the extreme vessels on the surface of the body from the colour; all the muscles from the strength they exert; the internal secretions from the great quantity of milk and semen; the digestive organs from the strong appetite, the power of digestion, the vigour of body, and the manifest abundance of blood.

(*b*) The voluntary motions are those that are performed under the influence of the will, such as the motion of the limbs in walking, or in any sort of exercise. The organs, by which they are moved, consist of bundles of moving fibres called muscles. The involuntary motions are those of the interior part of the system, such as those of the heart and vessels connected with it; the peristaltic motion in the first passages, which are the passage to the stomach, the stomach itself, and the whole convolutions of the intestines; as also those of the womb, of the bladder of urine, and so forth. None of the latter are under the influence of the will.

CLI. A comparison of the state of the intellectual faculties, and of the disposition to passion and emotion, in this diathesis, in good health, in the second form of diseases and the predisposition to it, will show how much they are heightened in the sthenic diathesis.—So much for the increase of the functions.

C H A P. IV.

The sthenic diathesis illustrated by an explanation of its symptoms — Functions increased from excitement — Shivering from lessened perspiration — Increased circulation — High colour of the skin — Delirium — Thirst and heat — Affection of the thorax — Paleness and corrugation of the skin — Pale urine — Costiveness — Appetite — Proper diet — Symptoms affecting the stomach explained — Why inflammation in phlegmasiæ is external — Local sthenic inflammation — Phrenitis — Peripneumony — Pustules.

CLII. THE increase of the force of the senses, of the motions, of the intellectual faculty, and of the passions, depends upon the increase of excitement in every one of their organs, by which, beside other effects, the motion of the blood through them is quickened.

CLIII. The onset of every sthenic disease is

is announced by shivering. This depends upon a diminished perspiration, by means of the diathesis being exquisitely strong in the extreme vessels of the skin. The same explanation is to be given of the sense of cold, which commonly accompanies the shivering; and of the dryness of the skin.

CLIV. In these diseases the pulse is stronger, harder, fuller, and somewhat more frequent, than in the healthy state. Its fullness and hardness are owing to the plentiful use of animal food during the predisposition. The force and frequency are occasioned by this or any other stimulus, as strong liquor or exercise, whether corporeal or mental: Nay all the stimulant noxious powers are adequate to this effect.

CLV. If, in the progress of the disease, the pulse sometimes becomes weaker, softer, emptier, and quicker, that is a bad sign. This circumstance is occasioned either by the debilitating plan of cure being pushed beyond the proper bounds; or where this method of treatment has been neglected, it may be owing to debility induced by the excess of excitement.

citement. The former of these is direct, the latter indirect debility; both to be avoided.

CLVI. The redness of the surface of the body, which is often preceded by paleness, and by a great increase of secretion, is occasioned by an over-proportion of blood, in consequence of an excessive sthenic diathesis obstructing the perspiration. The same is the cause of the head-ach and pains in different parts. For, as the head-ach so quickly and easily yields to bleeding, it is seldom to be suspected of being owing to inflammation within the head. And the reason for so thinking is strengthened by this further circumstance, that the inflammation arising in general diseases affects external parts only, as far as we know at present.

CLVII. The delirium also, that sometimes arises in a violent state of disease, is not to be imputed to inflammation, and for the same reason; for it yields so readily to bleeding and other evacuations, that there is no reason for suspecting inflammation within the head. That abundance of blood, by distending the vessels to excess, is the sole cause,
is

proved on the one hand by the redness of the face (*c*), which indicates this abundance, and on the other by bleeding removing the disease at once.

CLIX. Thirst and heat, which are also remarkable symptoms in sthenic diseases, depend upon the sthenic diathesis in the extreme vessels of the fauces and skin; in consequence of which these vessels become so constricted that the perspirable matter cannot be discharged. At the same time as the blood finds its way very near to the extremities of the vessels, it accumulates under the cuticle the heat generated in the system, which would be continually carried off, if the perspiration were free. So also from the affection of the ends of the vessels in the throat, the saliva and other fluids, by the free flow of which the throat is lubricated and freed from that sense of dryness, which is called thirst, are now suppressed,

(*c*) This redness is no proof of abundance of blood; temporary excess of exertion in the vessels of the part will produce it. In many diseases it comes and goes, where no plethora can be suspected. EDITOR.

and prevented from flowing out, and thirst is the consequence.

CLX. Hoarseness, cough, and expectoration, which are sometimes observed in sthenic diseases, commonly succeed each other in the following order:—hoarseness, then a dry cough, then a cough with expectoration. The cause of the hoarseness and dry cough is an obstruction of the exhalants and mucous vessels, which terminate in the bronchia, and are prevented from transmitting their contents to lubricate the air-vessels (*d*), so that the hoarseness may be removed, and the expectoration take place with freedom. Again, the expectoration is afterwards free, because the diathesis being now diminished, and al-

(*d*) The bronchia are the divisions of the wind-pipe running through the substance of the lungs, and blended with the blood-vessels. In the substance of the lungs, besides these two sets of vessels, the air-vessels and blood-vessels, there are likewise exhalants, small arteries, and mucous glands, coming off from the extremities of the red arteries. The wind-pipe is covered with the latter; and the great quantity of mucus thrown up from the lungs, often in perfect health, and in innumerable cases, both of sthenic and asthenic general disease, sufficiently proves the existence of the source from which it flows.

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lowing the ends of the vessels to be relaxed, and the fluids to be poured out in abundance upon the air-vessels, this whole organ is stimulated, and the fluids are thrown out with a cough or convulsive motion.

CLXI. As the greater freedom of expectoration now implies an abatement of the diathesis; so too great a flow, and too long a continuance of it, shows, that the diathesis is declining fast into the asthenic state; either from indirect debility, as when the disease, in its progress, has much exhausted the excitability; or from direct debility, as when the plan of cure, proper in kind, has been pushed beyond due bounds.

CLXII. These symptoms, while they stop short of direct debility, or are not yet changed into the indirect, are occasioned by heat, and whatever stimulates in excess, and removed by cold, and whatever acts as a weakening power.

CLXIII. Paleness and shriveling of the skin, clearness of the urine, and bound belly, which chiefly happen about the beginning of the disease, arise from a degree of the diathesis, shutting up the ends of the vessels in such

a manner, that either nothing is excreted, or the thinner part, as in the case of pale urine, only escapes. The cessation of the affection of the urine, of the obstructed perspiration, and of the costiveness, shows that the diathesis is now gradually abating, the disease becoming mild, and that it may entirely be removed by emetics, purgatives, sudorifics, and other debilitating remedies.

CLXIV. In sthenic diseases, when they are mild, the appetite is often not much diminished; and still oftener more food is desired than is serviceable. But every thing, except the lightest vegetable matter, in the form of watery potion (*e*), will do harm.

CLXV. When either from indulgence in rich food, or from a stimulant plan of cure, or from the disease having arisen from very active, noxious powers, and attained its highest degree of violence; in any, or all these circumstances, the other bad symptoms, mentioned above, break out directly, and the violent disorders of the stomach, or an acute

(*e*) It should be cold too, according to this system.
EDITOR.

pain of the thorax, show themselves indirectly.

CLXVI. In a violent diathesis, therefore, where there is little appetite for food, but a very great desire for drink; the patient is by all means to be gratified with the latter; but food should be avoided, as producing loathing, sickness at stomach, and vomiting. These symptoms are not usually of long duration, unless when the diathesis is now changing or actually changed into the asthenic state by the means mentioned above; but on removing the other symptoms by the proper debilitating plan of cure, they go off. When the sickness and vomiting are urgent, and begin now to be a little more obstinate, and have lasted some time, one may know that the diathesis still remains short of the change into indirect debility, by the following marks: if the pulse still maintains moderation in its frequency, and has not much abated of its fullness and force; if artificial vomiting and purging diminish the morbid vomiting—in a word, if the debilitating plan of cure still succeeds. But, it will then at last be understood that the disease is converted into the

opposite, when these symptoms every day increase; when the pulse becomes weaker and weaker; when griping and liquid stools are superadded to the symptoms that disturb the stomach, and when the antisthenic or debilitating plan of cure is now of evident detriment.

CLXVII. While these affections of the stomach and intestines, still stop short of indirect debility, excessive excitement will produce great disturbance in the stomach; this organ having on account of its great sensibility more proneness to indirect debility than any other (LIV): the most powerful stimuli too, and those that are signally efficacious in producing sthenic diathesis (*b*) are first applied

(*f*) As high seasoned animal food, wine, spirituous drink, cordials, and the whole train of high diffusible stimuli. Some of these, as meat and wine, have no effect upon the external surface, or any other part: others, as some of the condiments, such as mustard and strong spirits, and above all the diffusible stimulants, as æther, camphor, and opium in a liquid form, do act upon the external surface, and by their application to it support their own internal use. Thus, to prevent or remove the gout, anasarca, sprains, and so forth, the application of any of those

plied to it, and exert a greater force upon the excitability in that than any other part. These stimuli are the several preparations of animal food, the several kinds of strong liquor, the several condiments with which they are seasoned, the various diffusible stimuli, as the different preparations of opium, volatile alkali, camphor, musk, and æther. These all act upon the stomach with more force than upon any other part; than upon the intestines below, because they undergo a change from the first digestion before they pass into the upper portion of the intestinal canal; than upon the lacteal vessels, because they are not received into them till they are further diluted, and have undergone another change from the digestive operation, and when so changed, they are next carried to be mixed with the blood; than upon the heart and arteries, upon account of further dilution in those vessels,

those high diffusible remedies, just now mentioned, will greatly contribute, along with their use as taken into the stomach, to support the general operation. These, and innumerable others, are so many facts that have been suggested by observations and trials made in the prosecution of this doctrine.

and a constant change taking place through the whole course of the circulation; than upon the terminations of the arteries, whether exhalant or glandular, and whether these excrete from the body a matter already corrupted, or carry back by the lymphatic vessels an useful matter to the blood—and that both for the reasons that have been given, and particularly because some great change is made in the exhalants and glands; than upon the lymphatic vessels, where a new fluid is constantly flowing in upon the old in these parts by means of anastomosing branches, and chiefly in the thoracic duct; than upon the other blood-vessels, upon account of the great change that a repetition of the circulation produces; than upon the muscular fibres, whether voluntary or involuntary, because the stimuli never come in contact with these; than upon the brain or medullary substance, for the same reason, as well as from the great distance of these parts from the part that received the first contact of the stimuli. In one word, as all the exciting powers, whether salutary or hurtful or curative, act somewhat more powerfully upon certain parts than upon others,

others, which parts are generally those first affected, and with which they come into direct contact; these, therefore, in preference to others, are most liable to pass either from sthenic diathesis into asthenic, or from the latter into the former. Whether however the excitement has been increased or diminished in a peculiar part; and whether its diminution has been owing to direct or indirect debility, and in either way the asthenic diathesis has been produced; all the rest of the body soon follows the kind of change that has taken place, because the excitability is an uniform, undivided, universal property of the system. Since the agents have been, and are the same, that is, either excessively or insufficiently stimulant, or so to an ultimate excess; and since the excitability upon which they have acted, and still act, is the same, that is, since the whole consideration of the cause is the same, the effect must also be the same, that is, the same sort of actions, whether in excess or defect, must be established over the whole body.

CLXVIII. The inflammation, which accompanies the phlegmasiæ, or sthenic diseases, accom.

accompanied by local inflammation, occupies an external part, as far as its nature has been yet ascertained. The reason is, that heat, which is the most powerful noxious agent in those diseases, either alone, or alternating with cold, or succeeding to it, has much more power to stimulate externally, where it is directly applied, than internally, where the temperature is nearly stationary, and therefore raises the general diathesis to the degree of actual inflammation in some one part. Hence the throat, the different joints, the face, where the form of inflammation is different, as when the inflammation of erysipelas appears there; hence the lungs, which are to be considered as an external part, because the air has direct access to them, are all more liable to inflammation than other parts. And, besides the peculiarity in the mode of action of heat, there is in the part, that is to undergo the inflammation, a greater sensibility (see above LIII. λ .) than in others, or a more accumulated excitability; by means of which it happens, that of the parts that have been mentioned, sometimes one, sometimes

another

another is affected, more than the rest (g). To this consideration of the cause it may be added,

(g) In the inflammatory fore-throat the inflammation affects the throat, which is also sometimes the seat of an erysipelatous inflammation. In erysipelas, sometimes the face, sometimes one of the legs, sometimes the ear, sometimes the temples, are inflamed. I have frequently been affected with an erysipelas, that begins with an acute inflammation and pain in one ear, which is thickened to four times its usual dimension; from that it spreads over the whole hairy-scalp till it reaches the neighbourhood of the ear in the opposite side, never, however, affecting that ear: this progress has been sometimes from the right to the left, sometimes from the latter to the former, in proportion as either had been more exposed than the other to heat, or the alternation of heat with cold, or their succession to each other. This disease is sthenic, but in a mild degree, and to be removed by coolness, cold water, low vegetable fluid diet, and a slight purge. It was once greatly aggravated by wine, spirituous drink, and the diffusible stimuli. In rheumatism, the inflammation attacks a large joint, sometimes shifting from one to another, sometimes several at a time, and, in contradiction to the erysipelatous, is deep seated, extending to the interior part of the true skin, which is the case with every such inflammation, called therefore, phlegmonic; while its seat in erysipelatous is betwixt the scarf-skin and outer part of the true skin upon the corpus mucosum. To these phlegmasiæ, depending upon the
general

added, that whichever of the parts we have mentioned has been injured, in whatever manner it may have undergone the inflammation peculiar to the phlegmasiæ, that part, in every subsequent attack of phlegmasia, is in more danger of being inflamed than the rest. This is the true cause of the frequent recurrence of some of the phlegmasiæ, as the inflammatory fore-throat, and rheumatism (*b*).

Peripneu-

general cause of the disease, and especially upon the effect of temperature, may be added that which an inflammation in one of the ears accompanies, though this case is seldom admitted into the number of the phlegmasiæ. It is, indeed, sometime local, arising from local injuries, but is as certainly at others, a general disease, and to all intents and purposes a phlegmasia.

(*b*) These two diseases, in young vigorous persons, are very liable to be exceedingly troublesome by the frequency of their occurrence. In the younger part of my life the violence in degree, and frequency of recurrence, of the sthenic inflammatory fore throat, was very distressing, as the least variation of the external temperature, superadded to a full nourishing diet, not without the stimulus of a chearful glass, was ready to renew, not only the inflammation, but the whole phænomena of the disease. The same thing I have often observed in the frequent recurrence of rheumatism in persons of the same age and habit, perhaps, with some difference

mony is a disease less frequent than any of the rest of this form, because the seat of its inflammation is exempted from many stimuli, liable to produce sthenic diathesis with its accompanying inflammation.

H. As inflammatory fever, catarrh, the mild small-pox, are unattended by inflammation (unless that in the last a local inflammation from a local cause, quite different from that which makes our present subject, takes place), and as the inflammation in peripneumony, violent erysipelas, and similar violent affections, is found the highest in degree; I conclude, that the degree of inflammation, when it is a symptom of general sthenic diseases, is difference of temperament. But it is to be observed, that, in proportion to the advance of life, and diminution of vigour, both these diseases become much less frequent, and much less violent. Nor is any thing more common than their giving way at this time to a very opposite disease, the gout, which depends upon a superaddition of direct debility to the indirect, that laid the foundation of it. I am pretty certain my inflammatory sore throat, or erysipelas, never happened spontaneously, nor without an addition of stimulant power, to those that produce that disease, in consequence of carrying to some excess the plan of cure suited to the removal or prevention of the gout.

pro-

proportioned to the degree of the sthenic diathesis (*i*).

CLXIX. The inflammation, in this case, is only a state of the inflamed part analogous to that of the rest of the body. And as the inflammation is produced by a greater degree of excitement in the inflamed, than in any other equal, part; so, before the disease comes on, of which the inflammation is only a part or symptom, the excitement of that part is understood to be proportionally greater than in any other part (*k*).

CLXX.

(*i*) It shall by and by be showed, that this sort of inflammation is only a part of the general diathesis, somewhat higher in degree than in any other part, but far short of the degree constituted by the whole general affection.

(*k*) See above par. L. and LI. Suppose the excitement in every part of the system to be 45 at some point in the period of the predisposition, and 54 in the part to be inflamed; after the coming on of the disease the same proportion will hold: when the excitement has now mounted up to 60, the excitement of the part will be understood to have gone to 69; keeping up still the same proportion. But these 9 degrees of greater excitement in a part come far short of the sum total of excitement in all the parts affected with the general sthenic diathesis; that

CLXX. This inflammation, which for the sake of distinction may be called general sthenic inflammation, should be distinguished from another, which is a local affection, arising from local noxious powers, or depending upon a fault in the organ, or a solution of continuity (1).

CLXXI. To this last the term of sthenic local inflammation applies. General inflammation always depends upon sthenic diathesis, is a symptom or part of it, never precedes it, always succeeds to it sooner or later, arises from the same noxious powers which produce the other symptoms, and is reduced by the same remedies. In contradistinction to which, the local affection arises from some local in-

that you may suppose 3000: and then the conclusion will be, that the general sthenic diathesis consists in a sum total of morbid affection, as 3000; while the inflammation of the part is only an affection of 3 degrees of excitement.

(1) Solution of continuity in all its forms, whether as being the effect of puncturing, cutting, bruising, compression, erosion from acrid matter, or from heat, or cold, is always followed by an inflammation, which, when it goes on briskly, and needs to have its violence restrained, should be called as is expressed in the next paragraph.

jury,

jury, producing a solution of continuity, or deranging the texture of the part; and if the injured part is not very sensible, the affection extends no further. But when the injured part is endued with a high degree of sensibility—suppose the stomach, the intestines, among the internal parts; among the external, the tender substance under the nails—in these cases, the effect of the inflammation is propagated over the whole system, and, in consequence of an affection of all the vessels, excites a tumult every where. The same local sthenic inflammation, whether it be fixed in the part, or from its propagation gives more general disturbance, yields to no remedies, but those that act upon the affected part first, and heal the solution of continuity. Let it suffice to have said so much at present upon these inflammations, for the sake of establishing necessary distinctions. More is afterwards to be said upon the local, in its proper place. There are two inflammations still remaining, one universal and one local, to be more fully explained in that part of our work where the proper order requires it.

CLXXII. Inflammation, also, as often as
it

it affects a vital part, produces symptoms of disturbance. Whether ever the general sthenic inflammation affects the brain and its membranes, is hitherto not ascertained (*m*). It is more probable, that the commotion in the head, and other violent symptoms in phrenitis, do not depend upon inflammation, as the following phænomena seem to show: 1. the ease by which the cure is effected, all the symptoms readily yielding to bleeding, purging, and other asthenic remedies; and, it not being very credible, that the effect of actual inflammation in a part so delicate, and so necessary to life, could be so easily effaced: 2. There is no certain proof, after recovery, of the existence of inflammation during the disease: 3. Analogy makes for the same conclusion; for, as has been said above, general inflammation does not arise internally in any general sthenic diseases; on the contrary, as often as it occurs, it is always in

(*m*) Phrenitis has been thought, and commonly even defined, an inflammation of the brain; an opinion that, however universal, seems to be liable to much doubt: nay, there are many reasons for adopting an opposite one, as will appear from the reasoning in this paragraph of the text.

an external part (*n*). Nay all the symptoms are such as arise from the general sthenic hurtful powers, and, also, yield to the general antisthenic remedies, and in proportion to their degree.

CLXXIII. The same that we have assigned as the cause of phrenitic affection also is the cause of head-ach, redness of the eye, as well as of delirium in phrenitis.

CLXXIV. There is, however, no reason to doubt, but that inflammation is the cause of that disturbance, which happens to the lungs in peripneumony. To the part where the pain is felt externally, whatever part of the thorax it is, an actual inflammation is opposed internally. And, as the inflammation is proportional to the degree of general sthenic diathesis, and never happens but in a high degree of that diathesis; so the pain is proportional to the degree of inflammation

(*n*) It was long an opinion, that the inflammation in rheumatism might be transferred to an internal part, as the stomach; but that, also, is now laid aside, and all the cases where there could be the least appearance of any such transference, have been found to be cases of the gout, or some analagous disease of debility.

(*o*); and

(o) ; and the state of the pulse must be estimated by paying a due regard to its cause. In the case of an high diathesis, and high degree of inflammation, its effect, the pain, seated in some part of the thorax, sometimes

(o) The inflammation was supposed a chief and primary circumstance, and its cause and seat, the cause and seat of the whole disease ; while the general sthenic diathesis, and all the symptoms depending on it, was supposed the offspring of the inflammation. But the truth is, in every respect, the reverse of this account. The general sthenic diathesis is the effect of the general exciting hurtful powers. As the effect of these, in a less degree, it exists during the predisposition, and before the arrival of the disease ; and, after the disease is come on, it subsists, as certainly, as such, for one, two, or three days, as afterwards, when the sign of the inflammation, the pain, makes its appearance. It is only an increase of it, that induces the latter ; and it is not to be cured by any contrivance of throwing any thing into the inflamed part, there being no such thing to be found in nature, but by the several means of removing the common cause, that is, evacuant and other debilitating remedies. These, while, at the same time, they remove the other symptoms, by also removing the disease, prove that the common cause of the whole is the general diathesis. The inflammation, therefore, instead of being the cause of the general disorder, is a consequence, like every other symptom.

about the sternum, sometimes nigh the nipples, sometimes further back on either side, sometimes in the back between or above the shoulders, is acute and pungent, and the pulse very hard and strong. When the diathesis, and the part of it we call inflammation, are the pain is less acute, more dull, and easier to be borne; the pulse is not soft and yielding, according to the common notion, but still hard and strong, though less so than in the other case. Afterwards, in the progress of the disease, the pain abates, becomes dull, the respiration, which had been much disturbed by it, becomes more easy and free. The pulse which before was only less hard, now becomes truly and positively soft, and that in proportion to the degree of indirect debility, occasioned by a neglect of the proper plan of cure; or in proportion to the production of direct debility, from the antispasmodic or debilitating plan of cure having been pushed too far. But the hardness of the pulse, and violence of pain, are never to be imputed to the inflammation being seated in the membrane; nor is the softness of the former, and dulness of the latter, to be attributed to its occupying

occupying the soft parenchymatous substance (*p*), it being impossible that an inflammation, if it occupied either of those parts, should not reach the contiguous points of the vessels in the other. The cause, therefore, of those symptoms that has here been assigned, must be admitted.

CLXXV. The pustules, which accompany certain sthenic diseases, arise from a contagion, taken into the body, diffused over the whole, and, in passing out, detained along with the perspirable fluid, under the scarf-skin. The cause of the distention, and, therefore, of the great number of pustules, is the sthenic diathesis, taking place in a high degree over the whole body, but in a still higher in the vessels of the skin, for the reasons formerly assigned, (see above, par. CXIII. and CXIV). In which operation the muscular fibres of the vessels, because they are as much increased in density, in so far as they are considered as simple solids, as they receive an increase of

(*p*) Such, however, and many other distinctions, equally false, frivolous, and misleading in the practice, have been at all times universally received by systematic, and lately by nosological writers.

tone, in so far as they are considered as living (see chap. V.), are on that account so shortened, as not sufficiently to transmit the imperceptible vapour of the perspirable fluid. All the sthenic hurtful powers have a tendency to produce this effect, but heat, in a degree within its stimulant range, and short of indirect debility, more than any other. The same is the cause of costiveness.

Ⓒ. Sthenic diseases are often followed by debility, sometimes direct, at other times indirect, as is exemplified in the change of peripneumony into hydrothorax, the explanation of which is evident from what has already been said.

C H A P. V.

The asthenic diathesis—Its characters.

CLXXVI. BEFORE the disturbance, which only supervenes in a violent degree of morbid state, all the senses are dull; the motions, both voluntary and involuntary, are slow; the acuteness of genius is impaired; the sensibility and passions become languid. The following functions are all in a state of languor, as is discoverable from the annexed marks: The languor of the heart and arteries is discernible in the pulse; as is also that of the extreme vessels on the surface, from the paleness, the dryness of the skin, the shrinking of tumours, the drying up of ulcers (*a*), and the manifest absence of sthenic diathesis, to produce any symptoms like these. That the

(*a*) These symptoms have lately been construed into so many marks amounting to a proof of the existence of spasm upon the extreme vessels; but we shall, by and by, find a much better explanation of them.

muscles are in a state of torpor is demonstrable by their weakened action; and that the internal secretions are deficient, is equally certain from the penury of semen and milk, and the redundance of fluids in a state of degeneracy. The languor of the digestive organs is manifested by want of appetite, loathing of food, sometimes thirst, sickness, vomiting, weakness of the system, and evident penury of blood.

CLXXVII. In the same diathesis, whether remaining within the latitude of predisposition, or raised to the measure of actual disease, the intellectual faculties and the passions are impaired. In this way are the functions impaired.

C H A P. VI.

The asthenic diathesis illustrated by an explanation of its symptoms—Shivering and sense of cold from checked perspiration—Weak circulation from defect of stimuli—Bad sign when the circulation becomes suddenly strong—Pale and dry skin—Head-ach—Delirium—Thirst and heat whence—Appetite—Affection of the stomach—Cramps—No internal inflammation—Symptoms attending gout—Nature of the asthenic pulmonary affection—Head-ach and delirium, not from inflammation—Nature of asthenic inflammation—Of putrid sore-throat—Diffusible stimuli cure gouty inflammation—Confluent small-pox—Pustules, and other eruptions—Curious eruption in some cases of small-pox—Heat whence—and coldness in one stage of asthenic disease—How in violent sthenic diseases some functions are impaired, but not from debility—and in asthenic diseases augmented in appearance—Of spasm and convulsion—Action of opium—Of discharges

discharges of blood—Sthenic and asthenic affections of the lungs compared—Similarity of symptoms—Cured by opposite means.

CLXXVIII. SHIVERING is not unusual at the commencement of asthenic diseases of any considerable severity; it depends upon the perspiration being greatly checked. The cause of the great check is weakness of the whole system, but particularly of the heart and arteries, in consequence of which they propel the fluids every where with difficulty, and in the extreme vessels with still more difficulty, or scarce at all. Hence the perspiration ceases. The same explanation is to be given of the sense of cold, when it accompanies the shivering.

CLXXIX. In asthenic affections the pulse is weak, soft, small, and very quick. The softness (when it can be perceived for the smallness), as well as the smallness, is occasioned by an under-proportion of blood, arising, during the period of predisposition, from a scantiness of animal food, and an excess in the use of vegetables; or from a deficiency

ficiency of aliment upon the whole, whether from one or other of these sources. The cause of the weakness and very great quickness of the pulse is the same deficiency of nourishment, as well as of all the stimuli, as strong liquors, mental or corporeal exercise, and an under-proportion of blood.

CLXXX. Since the excitability can only be gradually worn down (see above, par. XXVI. XLIII.), and the strength, thereby, repaired; if, at any time, the pulse becomes full and hard too soon, and without a proportional relief of the symptoms, it is a bad sign, and happens because the stimulant plan of cure has been pushed beyond the proper rule (see above, par. XLIX.); this is a case of indirect debility superadded to the direct (see above, par. CLVI.).

CLXXXI. The cause of the paleness and dryness of the skin is the same as that of a checked perspiration; viz. the weakness of the heart and arteries. Hence the blood is not sufficiently propelled to the surface of the body.

CLXXXII. Head-ach (which is a most frequent

frequent symptom in asthenic affections) and pains in the joints (which are more rare) are occasioned by a scantiness of blood: for such is the effect of the blood in distending the vessels, that a moderate distention, such as takes place in health, excites an agreeable sensation; and every thing, either above or below that standard, occasions an ungrateful one, and, therefore, when it rises to a certain degree, pain. But in this case, we can much less suspect inflammation to be the cause of the pain than in sthenic diseases; because, not only the pain here, but even delirium, yields so easily to the stimulant method of cure; which would not readily happen, if so delicate and sensible an organ, and one so necessary to life, laboured under an affection so likely to destroy the texture of the affected part.

CLXXXIII. Neither, in general, is delirium to be imputed to inflammation. It is, on the contrary, to be attributed to a scantiness of blood, and a deficiency of other stimuli. Nor can this be doubted; since stimulant remedies, which have no effect in filling

ing the vessels, successfully and quickly cure every delirium depending on debility (*b*).

And, when, in consequence of the removal of the disease, and of the re-production and establishment of the healthy state, enough of nourishment is taken in and digested, then it is that, at last, the mental functions are completely and solidly re-established.

CLXXXIV. Thirst and heat, which are not less remarkable in asthenic, than sthenic diseases, arise from the asthenic diathesis in the throat, and on the surface of the body. In the latter case, the perspiration; in the former, the excretion of the saliva, the exha-

(*b*) This is an observation as new, and of as much importance as any in this whole work. Physicians, hitherto, had no distinct notion of a variety of inflammations; and had scarce any idea of any inflammation, but such a one as was to be treated with bleeding and evacuation; nay, often, when they had no reason to suspect inflammation at all, the mere circumstance of pain was, in their estimation of it, sufficient to warrant a profusion of bleeding without end. But, the truth is, that pain may not only arise from an inflammation, which they had no idea of, and which was to be cured by stimulants, but it arises from spasms, convulsions, and even from emptiness.

lable fluid, and the mucus, are checked by the atony and relaxation of the extreme vessels. In consequence of the former, the throat, not being sufficiently lubricated with a due quantity of its respective fluids, is scorched with thirst. The effect of the latter is, that, the perspirable fluid being detained under the cuticle, the heat, which in a free perspiration usually goes off into the air, and remains nearly of the same degree, is accumulated and increases. But the increase of heat does not depend on the state of excitement, or, as it is commonly called, on the principle of life, since it happens both in the sthenic diathesis, and, likewise, in indirect, as well as direct, debility. But the weakness of the vessels on the surface of the body (under which the throat, and whatever part is accessible to air, are comprehended) is a part of the debility of the heart and arteries; the latter a part of that of the whole system.

CLXXXV. This asthenic thirst, which is a much more frequent and more violent symptom than the sthenic, is preceded by loss of appetite; the loss of appetite is succeeded by loathing of food, by sickness, vomiting,

miting, often by an acute pain of the stomach, and other troublesome symptoms; to the explanation of which we next proceed.

CLXXXVI. Want of appetite, and loathing of food (*c*), depend upon debility of the whole body; as is proved by the powers that produce them, always acting by debilitating;

(*c*) These symptoms of want of appetite, loathing of food, thirst, sickness at stomach, vomiting, and acute pain of the stomach, as well as those that follow to CXCIV. and from that to CXCVIII. form a chain of symptoms depending upon increasing debility, which, instead of being different in kind, are all connected by an uniform operation of nature. And they furnish an instructive instance of the erroneous mode of judging of the nature of symptoms, and morbid affections, which has been so prevalent in all systems of physic, that we are yet acquainted with. However different in appearance, they are not only similar, but all unite in forming one and the same kind of disease, one and the same morbid affection: which is proved by their arising all from one and the same set of hurtful powers, to wit, debilitating; and by their being cured by one and the same set of remedies, to wit, stimulant. The former powers may vary in degree, but they are all debilitating; and the latter may also act with different degrees of force, but they are all stimulant. And the state of the system, from which the former constitute a deviation, as well as that, to which the latter produce a return, is health, which is always the same.

and

and by the remedies, which both prevent and cure them, always acting by a stimulant and strengthening operation. The cause of appetite is a strong and sound contraction of the fibres of the stomach, by which digestion is supported (*d*), and the excretion of a fluid,

(*d*) The fibres of the stomach are muscular, and partly longitudinal, partly oblique, or approaching to circular. When the food is taken in, the former are contracted and shortened, by which they raise the under part of the stomach, which is unfixt, upwards. These gradually relax as the food, after its first digestion in this organ, and its conversion into a more fluid form, in the same gradual manner, passes out of the pylorus, or under orifice of the stomach. This operation takes off the distending weight in the direction from above downward; and, as the food in proportion to its conversion from a more solid to a more fluid form, is more and more collected into the under part of the cavity of the stomach, this gives a pressure in the lateral way, and, therefore, throws the other fibres into contraction, by which the sides of the stomach are squeezed together, and, thereby, perform the office of throwing out, by the pylorus, the remaining part of the alimentary matter. Besides these successive actions, the muscular substance of the stomach is so constructed as to be provided with fibres, the motion of which, when the stomach is full, is upward and downward; when empty, downward only. All these motions give the alimentary matter the mechanical agitation necessary to promote its mixture.

as

as the gastric liquor, and the saliva (*e*): and to both effects a certain emptiness of the stomach is necessary. But none of these circumstances can take place in a state of debility. The fibres do not contract with force; the extreme vessels do not pour out their fluids; the food, before taken in, is not dissolved or digested, and in that state thrown out of the stomach; but continues in a great measure unchanged and undissolved. Hence there is no appetite for food, and in a higher degree of this affection loathing takes place.

CLXXXVII. In the same manner thirst has been explained (see par. CLXXXIV.); and in the same manner is the sickness, which

(*e*) The gastric fluid, poured into the cavity of the stomach, as well as the saliva that follows it from the palate, and the watery or other drink taken in by the mouth, contribute to change the food more and more into a fluid consistence, which is a change only of its form: but, by certain means, a change also of its nature, called in chemistry proper mixture, takes place. This change is chiefly effected by the gastric fluid, to which, perhaps, a certain relation that the other fluids bear to the alimentary matter in this living organ, contributes. Another means of promoting the solution that goes on in this process is the heat of the stomach.

is a higher degree of affection from the same cause, to be explained; for when there is strength and vigour, sensation is most agreeable in every part of the system, as well as in the stomach and neighbouring parts.

CLXXXVIII. With respect to vomiting; it is the most considerable of all these affections: for to such a height has the atony and laxity of the fibres in the stomach gone, when it comes on; to such a degree has the collection of crude matters proceeded, and the distention of the stomach from these last, and from extricated air, that the fibres are oppressed, and cannot perform their motion from the upper to the lower part, which is commonly called the peristaltic motion. And, as in every case, both of health and disease, the tendency of that motion is always in an opposite direction from the stimulus; downward when the stimulus proceeds from the mouth, and upwards when it comes from the stomach; hence the crudities and air acting as a local stimulus, direct all the motion, that they excite, towards the upper parts of the canal. This inverted motion, being contrary to nature, can never be agreeable; and
hence,

hence, before the arrival of the vomiting, sickness arises; which when it continues for any time, must be violent, because the local stimulus rouses the muscular fibres into violent and irregular motions.

CLXXXIX. The cause of pain in the stomach and intestines, and other parts, both internal and external, under asthenic diathesis, is spasm. Spasm in any internal cavity, that is, in the organs of involuntary motion, arises from a relaxation and atony of the fibres, (in consequence of the debility common to the seat of the spasm with the whole body) accompanied by a distending matter: this distending matter in the stomach is the fordes or foul crudities; in the intestines, hardened excrement; in both, air let loose. The effect here does not so much depend upon the distention as upon the lax state of the distended fibres; for the fibres, when strong and vigorous, easily repel the distending power, which overpowers them in this state: but the relaxed fibres, of which we are speaking, yield more and more, in proportion to the urgent force exerted on them, till losing all power of alternate motion, they continue immova-

bly contracted. All which arises from that property in muscular fibres, by which, when they are stretched, they do not, like common elastic matter, contract only after the distending power is removed, but even while it remains. In this state the sensible fibres undergo a certain violence; and hence the pain (*f*). But, that more is to be attributed to their own laxity, than the distending matter, is proved by stimulants restoring the tone and density, which are exactly in proportion to each other, as depending upon the same cause. After the application of stimulants, they contract; and, re-acting like healthy fibres, without any other assistance, as has lately been ascertained, they restore the peristaltic motion, and drive downward before them the matter, still remaining, and still continuing to distend them (*g*). In this way wine, aromatics,

(*f*) Pain arises here from diminished action. Sensation, either agreeable or disagreeable, always follows any considerable increase or diminution of the irritative motions. EDITOR.

(*g*) The prevailing notion with respect to this kind of affection has been, and still is, that its cause is the matter

aromatics, and volatile alkali, and, above all the rest, the various forms of opium, dislodge all such hurtful matter without either vomiting or purging, and without any difficulty, in a very short space of time.

CXC. The pain, which is so often felt in the external parts of the body, also depends upon spasm, but without any distending matter: for an effect of volition on the voluntary muscles produces the same effect; so that the spasm is excited in the same manner as by distention, and often with the most exquisite pain. Now as the effect is the same, that is, spasm arising from debility, and as it may be removed by restoring the strength; the cause also must be the same, and be reducible to debility, together with something that acts like distention, and possesses a power

ter here spoken of, which is only an effect of the cause, and that its cure, when the affection is in the stomach, is vomiting to carry off the supposed cause. But its true cause is the laxity of the fibres, and their atony from the general debility, yielding to the distending force of the matter, and thereby losing their tone and density more and more; while vomiting therefore increases, stimulating removes the disease.

equal to it. By this way of reasoning (*b*) we may often safely ascend from the contemplation of known effect to the unknown cause. The pain we speak of at present, is that produced by spasm of the muscles.

CXCI. There is another pain, more diffused, and equally troublesome, which is not supported by distention, but by another local stimulus: this pain equally arises from debility, has equal tendency to increase the debility, and, by its debilitating operation, after having induced other symptoms of debility, soon occasions death. This pain arises from a

(*b*) A way of reasoning never made use of in medicine before, but which runs through, and influences most of the propositions in this work. It is further to be observed, that, upon no occasion, can we ever arrive at an adequate knowledge of abstract causes; that the eagerness of mankind to rush into wild and fanciful explanations of them, without any regard to real phenomena of nature, has been the cause of all the false phenomena that ever appeared in the world, and that the only sure and faithful guide to the study of causes is a cautious and painful investigation of the effects and phenomena of nature that proceed from them. See more upon this important subject, and, indeed, a complete discussion of it, in my book, entitled, "Observations on the old Systems of Physic."

strong

strong acid, which is sometimes predominant in the alimentary canal, when under the influence of great debility, of which cholera is the chief instance; but all the affections of the alimentary canal besides, that are accompanied with vomiting and a loose belly, are more or less examples of it.

CXCII. This acid is not the primary cause of the disease; it is only a symptom arising, after the complete establishment of the disease, from the same source as the other symptoms, viz. debility; and it may be removed by the same remedies. This acid increases the debility both of the first passages and the rest of the body: but while it exerts that operation over the whole body, its chief influence is in the part where it exists, and where it is most urgent to lessen the violence of the disease.

CXCIII. But, though it be itself, like spasm, the offspring of debility, and tends to create further debility; still there is not, either for the sake of changing, or throwing it out of the body, occasion for any other indication of cure: For, as it has its rise from

a general cause, so it all along depends upon that; and whatever has the effect of overcoming the other symptoms, has also that of overcoming this. For this, as in the case of spasm, stimulants,—not emetics, not purgatives, or any other debilitating powers,—are required.

CXCIV. As this acid produces pain in the internal parts, or in the organs of involuntary motion; so in the external parts, or organs of voluntary motion, pain is occasioned by something that produces the same effect as the acid, and depends upon the will, and acts in conjunction with the convulsive state; and, as in the spasm of the voluntary muscles, there is no matter that corresponds with the distending matter sometimes lodged in the stomach, so in this there is none to correspond with that which produces the pain. Nay, as the spasmodic case is represented by any cramp of the muscles, so is the convulsive by any convulsion, but above all, by epilepsy. Finally, as in the former, the same reasoning from known effect to unknown cause proves the sameness of the external
and

and internal case, it equally proves their sameness in the latter (*i*).

CXCV. The simple course of the morbid affection, from its slightest to its most violent degree (to take a review of the subject from the place where we set out), is this: it begins with loss of appetite, and is brought on

(*i*) All this reasoning with respect to spasm and convulsion, showing them to be the same, and only a part in the whole, a link in the chain of the other asthenic affections, which have been mentioned, as well as the facts and arguments next to be brought, which will serve to prove all that follow to be also the same, is, of itself, of the highest importance to mankind. In a particular manner, the whole tribe of diseases of the alimentary canal, and almost all those of children, all, indeed, but the contagious eruptive ones, are both explained, and their principle of cure ascertained, with geometrical exactness. Here, then, at once is a discovery, upon scientific principles, of the true nature, and certain cure, of more than one-half of the diseases of the human race; the method of cure arising from this doctrine having never failed in any of them, and never succeeded upon a contrary plan, the debilitating and evacuant, so universally recommended by the authority of the schools. The spasms and convulsions of the external parts, unless when immoderate in degree, are equally certainly removed by the new method, and even epilepsy and tetanus yield to it,

by

by want of food and of other stimuli, or by an over proportion of stimuli, and proceeds through all the intermediate degrees to the spasmodic or convulsive pain. For the reasons lately assigned, there is first no appetite for food, and if the patient perseveres in the debilitating process of cure, and food is not administered, (such, suppose, as can be taken in the form of soup), a loathing of it follows. By-and-by, if nothing is used to produce stimulant effect, thirst will come on; there will be the keenest desire for that most debilitating power, cold water, which will be preferred to the greatest dainties, and will be greedily swallowed (*k*). To this, sickness immediately succeeds, and very soon, vomiting, unless prevented by a diffusible stimulus, such as a glass of pure spirit, or if one fails, a second, and perhaps, in some cases, a third. When the affection rises a little higher, during the vomiting a violent pain is felt in the stomach, giving a sensation as if

(*k*) When this asthenic thirst comes on, it is the highest luxury in nature to be allowed a free indulgence in the use of cold water, which is always hurtful in proportion to the degree of its coldness.

there

there were a bar of iron in it, forcibly stretching and tearing it across (1). When the affection becomes still more severe, every species of torture is undergone; an head-ach comes on with a sense of strokes like those given by an hammer. These violent symp-

(1) A lady, after nursing her twelfth child for seven months, was found by her husband, a physician well acquainted with the new doctrine, very low spirited one evening. She was of a delicate, thin, exhausted habit, and had been subject often before, towards the end of her periods of nursing, to loss of appetite, colic, dejection of spirit, and as often cured by removing the child from her breast, and putting her upon a rich stimulant regimen. Her friend and physician perceiving the cause of her dejection, ordered two of their daughters, who happened to be grown up, to sit up and rock the child in the cradle all night, and also watch their mother to administer to her the things he had ordered. They themselves went to bed. The reader should have been informed, that such was this lady's lowness of spirits, that tears burst from her eyes upon hearing the sudden order for the weaning of the infant. The husband fell asleep; but in an hour's time was awakened by the noise of a most violent vomiting she had fallen into. She had a pain in her stomach at the same time, from her account of which the description above was taken. All this had been occasioned by her applying the child's mouth to her nipple.

toms are communicated to the alimentary canal, for the most part not immediately, but in consequence of the disease remaining, with the intervention of intervals of deceitful respite. The belly is often affected with very painful gripes, and is exceedingly loose; but, what will not be wondered at in an inverted state of the peristaltic motion, it is oftener constipated, and, from time to time, undergoes all the vicissitudes of alternate vomiting and purging. Among the troublesome symptoms, that have been mentioned, are comprehended dyspepsia, the gout, diarrhœa, dysentery, cholera (*m*), the colic (*n*), the iliac passion,

(*m*) Or that disease, the urgent symptoms of which are alternate vomiting and purging, the effect of which, while their cause is a general weakness over all, but prevalent in the first passages, is to increase the weakness, from which they proceed to such a degree, as to hurry on the patient's death, with every symptom of expiring debility, in the short space of sixteen hours. This happens in the warm countries, as the southern parts of Europe, and especially in the torrid zone, whether in Asia, Africa, or America,

(*n*) The colic has been commonly treated by purging and bleeding, and low diet; but in no instance has that treatment of it been successful. Opiates were particularly

passion (o), the green purging of infants, the worms, that wasting of the body called tabes,

larly forbidden upon the supposition of their constipating the belly ; but the truth is, that the colic, as well as diarrhoea (which has been supposed a disease of an opposite nature, from the seeming contrariety of looseness of the belly and costiveness to each other), are the same kind of affection, only differing in degree. And the colic is to be removed by no other means than those that remove the simple looseness ; that is by durable and diffusible stimulants.

(o) Which is that higher degree of colic where vomiting comes on, and the peristaltic motion is so inverted as to occasion the rejection of stercoraceous matter by the mouth. Sometimes in the progress of the same disease, especially when treated only by evacuation and bleeding, a portion of gut is insinuated into the cavity of the next portion. This is called in the art Volvulus, or Intus Susceptio. The quick and effectual cure of colic before the symptoms of volvulus make their appearance, is a good proof that the latter is induced by the purgative medicines, employed to clear away the obstructing cause, acting with such relaxing effect, and urgent violence, as to turn back the inverted motion in one part, while it continues inverted in all the rest, and particularly in the portion next to it. The ordinary evacuant plan, therefore, is a cause of the violence of the disease in all its stages ; and lastly, of the last, which becomes a local and immoveable affection. Nothing could be more absurd than the reasoning that has directed the practice

tabes, or atrophy (*p*), both of them diseases chiefly of children, and their most frequent diseases.

CXCVI.

practice of physicians. In which, besides the general rules of bleeding to cure bleeding, vomiting to cure vomiting, and purging to cure purging, and besides the contradiction of employing purging in colic, which by the last rule only applies to diarrhœa; they have taken it into their head, that a good means of removing the obstructing matter in colic, was to throw in a large quantity of heavy substance with the intention of forcibly displacing it; reasoning in that way not so well as a soldier would do in clearing away any foul matter from his fire-lock; for it should have been remembered, that whatever effect such substances, as quicksilver, might have by their weight in pushing downward any obstructing matter, they must operate with a contrary effect, as often as in the convoluted state of the intestinal canal, the course of any portion was upward. Neither did it ever strike them, upon any one occasion, what they should never have left out of view upon every occasion, that the idea of the action of dead matter upon dead matter, whether mechanical or chemical, that is, perceptibly or imperceptibly mechanical, is never to be transferred, in sound reasoning, to the mode of action of the same dead matter on living matter; the excitement in no case whatever admitting of any such analogy.

(*p*) These two diseases, according to a theory that has at all times prevailed in the schools, and has pervaded all medical systems, are supposed to originate from an obstruction

CXCVI. As the cause of the disease increases in violence, and the exciting noxious powers

obstruction in the mesenteric glands, through which the chyle, or alimentary matter, after undergoing a double preparation, one in the stomach, and another in the first convolutions of the intestines, has to pass before it arrives at its common receptacle, the thoracic duct, in order to be thrown into the venous mass of blood; and to remove it, still upon the same idea, as if all the cavities of the animal economy, whether great or small, were to be cleansed like the soldier's firelock, no limits were set to the use of gentle aperients, and particularly the use of mineral waters. And they used gravely ("risum tene-
"atis amici!") to tell us, that with the help of a course of time, suppose the arrival of the infant or child, at the seventh year of his age, that would carry off the disease by its detergent operation, provided the obstruction were not so great as to induce death before the lapse of that period. That all this is silly theory devoid of all foundation in truth, is proved by the completion of hundreds of cures in the shortest spaces of time, by means of durable stimuli, which act upon their delicate frames with such efficacy as to supersede, unless in the most violent cases, all use of the diffusible. This remark applies likewise to worms, for the cure of which no bounds were set to the use of purgatives, upon the idea of clearing away the stuff in which these vermin nestled; a practice not so judicious as that of some foolish boys, who place their success in bird-catching upon the chance of bringing

powers prove more urgent ; the external parts are drawn into consent, and now the organs of voluntary motion are affected. Sometimes ing down the nests from the top of high trees, by throwing sticks and stones at them ; while other boys, both more sensible and alert, climb up and seize every one of them. The cause of worms is the same as that of all the other diseases we have spoken of, differing in nothing but in what they all differ from each other, mere degree. Debility over all, but prevalent in the alimentary canal, occasions a weakness both in all the other functions, and particularly in that of the peristaltic motion. This state implies a similar weakness in the vessels that pour their fluids into that cavity ; their weakness implies an enlargement of their diameters, and that enlargement an increase of the quantity of fluids thrown in, without any increased impulse behind. Hence arises a colluvies of matter, which the increased peristaltic motion is not able to throw off. The colluvies is increased by the use of vegetable matter and fruit taken into the stomach, and depositing their feculent parts on the intestines. The indication of cure is not to increase either the general, or particular part of the cause, by purging, and the use of other debilitating powers, but to strengthen the whole living system ; and especially the intestinal canal, by the whole round of stimulant remedies diffusible or durable. To this treatment the tabes and atrophy will yield in a few days, or even hours ; the worms in as many weeks. And they are all increased by the common plan of cure, as universal experience has proved to a demonstration.

the

the legs, sometimes the arms, and other parts, differently upon different occasions, are tortured with cramps; sometimes the thorax all round; sometimes the shoulders, sometimes the sides, sometimes the back, sometimes the neck, are affected with pain, from which no part of the human body is exempted; the region of the lungs, of the liver, and of the stomach, are especially liable to them. The smart pains that affect these parts, and are supposed to proceed from internal inflammation, are, in reality, owing to spasmodic or convulsive affection (*q*). That this is their
true

(*q*) Endless have been the bleedings and other evacuations employed to remove those painful affections, and as dismal has been the effect of that method of cure. The universal rule, suggested by the principles, and confirmed by the practice of this new doctrine, is to invigorate the whole system, and apply any diffusible stimulus, particularly laudanum, to the pained parts. By that practice I know not one cure, of some hundreds, that either I or my pupils have performed, that has failed. The gout will sometimes make its attack in this way. But whatever be the particular force of disease, with which they may seem to have any connection, the only diagnosis here necessary is to be sure that the true peripneumony is not the morbid state. When that is out

true origin is proved by the application of stimuli, which remove the affections, often of the question, and whether the painful complaint be denominated bastard peripneumony or not, the only indication of cure is what has been just now mentioned. A young lady, with whom I am nearly and tenderly connected, has been often affected with an acute pain in her right side, mostly fixed and solitary, sometimes accompanied with a certain numbness and senselessness in her extremities, commonly with loss of appetite, and some degree of head-ach. The effectual method of cure is to apply rags dipped in laudanum, volatile alkali, or æther, and renew them as often as they become dry, and to support her internally with durable and diffusible stimuli, proportioned in kind and quantity to the exigence of the case. This method of cure of a morbid affection, that upon the contrary debilitating evacuant plan would be readily and quickly converted into an incurable asthenic disease, has always proved infallible in removing the attacks, which never after return but when she has enfeebled herself by keeping the house too much, and neglecting air, exercise, and the use of the other diffusible stimuli. Friction used over all the affected parts, is also found useful in supporting the stimulant operation of all the other remedies. There is in the fens of Lincoln, where an eminent physician, and follower of this doctrine, practises, a disease called a bastard peripneumony; in which, though it had always baffled all the efforts of the common evacuant practice, he never lost a patient, by exercising the contrary one.

immediately

immediately, always in a short time, and reproduce the healthy state. It is proved by the unsuccessfulness of the contrary method of cure, which consists in bleeding, purging and abstinence. Nay, what even makes more for the same conclusion, is, that, while abstinence almost alone is often sufficient to produce the pains, rich food also alone has proved sufficient to remove them (*r*).

CXCVII. The same pains, sometimes combined with inordinate motion (*s*) sometimes without it (*t*), are absolutely free from inflammation. To distinguish them from the pains that flow from inflammation or a similar origin, the accompanying symptoms must

(*r*) This I have often experienced in the case of the gout. Before dinner, when my stomach was empty, I have limped in going abroad to dinner. But after having made that meal heartily, and taken a glass or two of wine, I have returned with a perfectly firm step, and free from all feeling of pain and uneasiness.

(*s*) As in the convulsive kind so lately spoke of, where the enormity of motion is sometimes external, and in the organs of voluntary motion, sometimes internal, as in cholera and so forth.

(*t*) As in the spasmodic pains, head-ach, pains in the legs and soles, where there is an inability to perform the due motion.

be attended to. A sthenic diathesis indicates that whatever pains occur are sthenic; and we may gather from the asthenic diathesis that the pains appearing in it participate of its nature and are as certainly asthenic. This remark is of general application to diseases of daily occurrence, and overturns the common practice. Even head-ach, which is so frequent an affection, may ten times be removed by the stimulant plan, for once that the contrary answers (u).

CXCVIII. Symptoms of disturbance occur

(u) The true reason for all this, and innumerable errors in the practice, is that the leaders in the profession never understood any diathesis but a sthenic one, or any indication of cure but an asthenic, to which they gave the name of antiphlogistic, as they did that of phlogistic to the diathesis. By his reformation of the erroneous plan of cure that his contemporaries, the alexipharmics, had introduced, in the small-pox and the few other sthenic diseases that ever occur, in all the rest of the general diseases Dr. Sydenham's authority confirmed the error. He left also the measles as he had found that disease, and all other general diseases, which are much more in frequency than 97 out of the 100, or 97 to 3 of the sthenic. Great men had need to be cautious, as the least inadvertency in them, not to say essential mistakes, never fails to lead their followers, who are commonly servile

cur also in asthenic diseases as well as in sthenic. Such a state of disturbance (x) takes place in the alimentary canal in the cases of hysteria, colic, dyspepsy, and the gout. Thus in the alimentary canal, besides the pains, mentioned above, a certain sense of burning, anguish, contortion and direful torture, exhibit a set of appearances, formidable in the highest degree, both to the patient and bystanders, and which beget a suspicion of their proceeding from inflammation. But that these affections have nothing to do with inflammation, and that they depend upon a state of the part quite the reverse, has been proved by the success of the stimulant method of treatment in every instance in which it has been tried (y). This is confirmed by the

fervile imitators, and implicit believers, into capital error. If ever they attempt any thing of themselves it is commonly to raise a crazy superstructure upon a false foundation, it is commonly to refine upon error ad infinitum.

(x) All in the original from "Talem" in the last line to "febribus" in the first of the next page inclusive is erased, as being an anticipation of a subject, that is to follow in the CC paragraph.

(y) Till this doctrine appeared, it was impossible to erase from the minds of physicians an impression that

the use of wine, opium, and other diffusible stimuli. Afterwards and along with them animal

had been deeply made there, that nothing but the only inflammation, that they were acquainted with, could be the cause of such pain and torture, as is described in the text. I have more than once experienced the whole concourse, here mentioned, and have always found them to yield to the most stimulant method of cure, that I could contrive. I once laboured under this modification of asthenic disease for no less than ten days, and was always able to overcome it in two hours, and procure an interval of complete ease and relief for the rest of the day. The remedies employed were the whole round of diffusible stimuli, as opiates in all their forms, camphor, musk, volatile alkali, and æther, &c. By these the functions for the time were completely restored. But their stimulant effect was no sooner perfectly gone off, that is, after the interposition of a long sleep, through the night, than the symptoms returned with a violence little short of what it had been the day before. This was proof positive, that their nature was asthenic, or consisting in debility; since they yielded to stimulant remedies; and that the debility was exquisitely great, since it required so high a degree of stimulant operation to remove it. While that is the undoubted fact, there is a nicety with respect to proportion to be attended to in this case. It is a rule, that the degree of curative means, whether in the cure of sthenic or asthenic diseases, should be accommodated to the degree of the diseased state or degree of the cause. If too little of the curative

mal soups, then solid meat, the usual way of living, and precautions against debility, effectually re-establish the healthy state (z). This plan

curative means is employed a proportional part of the disease will remain: if too much, the disease will be more than removed, that is, another state which may be morbid in another extreme, may take place. Too much was once employed in this affection, and the effect was, that the disease was not eradicated till the tenth day of its course from the beginning.

(z) The rule here is, if indirect debility be the cause, to begin with a high degree of stimulant cure, and gradually reduce it to the ordinary degree that is sufficient for the healthy state. And the caution is to be sure of this gradual reduction, otherwise the indirect debility will be liable to return the moment the effect of the stimuli is gone off. By an attention of this kind a disease depending upon indirect debility may be cured in the sixth part of the time, that would be taken up by the cure, when the remedies are every day carried beyond the due bounds. For example, if the indirect debility be in the table the effect of an application of 71 degrees of exciting power instead of 40, that is to say, the excitement is worn down to 9 instead of being up at 40; it is evident, that an application of 71 degrees by way of remedies, will leave the disease where it was. Suppose only 65 degrees of stimulant power administered; the excitement will fall to 65, and the wasted excitability rise to 15. Next day let only a degree of exciting power

plan of cure proves to a demonstration, that these affections are very foreign both to sthenic inflammation and every degree of sthenic diathesis; and, as general sthenic inflammation does not appear to affect internal parts, this affords another argument against inflammation being here the cause (see CLXXXII. and CLXXXIII).

CXCIX. The asthenic pulmonary affection is accompanied with so intolerable a fixed

power as 60 be applied; then the degree of excitement will be that number, and that of excitability 20. Five degrees of exciting power still less will reduce the morbid excitement to 55, and raise the excitability to 25. And so on may the matter go, till the excitability is raised to 40 and the excitement reduced to the same number. But, if the reduction be much less by the day, the cure will be proportionally slower. Nay, such an error may be committed as to increase the disease instead of reducing it, which will happen, as often as a degree of stimulant power is applied, which is more than equivalent to that which produced the disease. All this attention and caution is necessary in the cure of asthenic diseases of indirect debility; while that of those of direct debility is easy and simple, to wit, to give the stimulants in small proportion and often repeated, till the disease is removed, unless, which may happen, you can guess the proportion, which may suffice to remove the disease at once, or at least, twice.

pain,

pain, that no bounds have been set to bleedings for the cure of it. But they have not only been useless, but detrimental, and often fatal; whereas, on the contrary, the stimulant plan of cure has always succeeded (*a*). In this affection the respiration is interrupted, and nearly all the symptoms that accompany an actual peripneumony, distress the patient to such a degree as to give rise to the suspicion, or rather to establish a firm persuasion, of the presence of inflammation. Or if any difference was observed betwixt this affection and that species of phlegmasia, the observation only suggested a futile distinction, and a question concerning the seat of the inflammation. The opinion that inflammation is the cause of these symptoms still subsisted. But that the disease depends on pure debility, is abundantly evident from the arguments already adduced. It is increased by the antiphlogis-

(*a*) A young lady afflicted with these symptoms was in the course of a month bled thirty times, always with a temporary relief, but with a return of the disease more violent than ever. She was then put upon a stimulant plan, and in less than a month restored to her perfect health. This was among the most early cures taken from this doctrine.

tic,

tic, and removed by the stimulant plan of cure.

CC. The following formidable symptoms, which most medical writers have imputed either 1, to irritation, as typhomania and the starting of the tendons; or 2, to plethora alone; or 3, to plethora joined to mobility; are manifestly owing to debility (*b*), the common

(*b*) No diseases are more opposite to each other than high sthenic diseases, such as the common inflammatory fever, or peripneumony, and proper fevers; the former, in the table, standing at the head of the scale of increased excitement, and the latter at the bottom of the scale of diminished excitement. And the same method for the cure of both has been pursued, to wit, the evacuant, debilitating. If, in peripneumony, large quantities of blood were taken at a time, the difference has been made up in the cure of fevers by repeating it the oftener; while all the other evacuations were carried on with the same profusion in both. When they talked of the respective causes of those diseases, phlogistic diathesis was the word for the high sthenic diseases, and irritation for the high asthenic. But these were words only, while in fact the method of treatment of both was the same, at least, in kind; and scarcely different in degree. To whatever part of any system of physic we turn our attention, we constantly see one mode of practice running through the whole, and that too, notwithstanding of the supposed

common cause of asthenic affections: these are stupor in apoplexy, in epilepsy and in fever; the false wakefulness, called typhomania, starting of the tendons, and coma, in fever; convulsion and diminution of the voluntary motions in epilepsy and apoplexy. This appears from the debilitating noxious powers, whether acting directly or indirectly, alone producing these diseases; and from the stimulant remedies alone, relieving or removing them. It is in vain to impute apoplexy to plethora; as if at a period, when the body is nearly worn out and almost bloodless, when the usual degree of aliment is neither desired, nor taken in, nor digested, more blood could be produced than in the flower and vigour of human life. On the contrary, at the time when apoplexy comes on from indirect debility, induced by old age or excessive incitement, the solids are languid, the quantity of

supposed great number of diseases, very limited. It turns all upon bleeding, other evacuations, starving, and some other trifling directions under the title regimen. It was all antiphlogistic to use their own language; and, whatever other language they held, the nature of the disease, if we are to judge from their treatment, was phlogistic.

fluids

fluids deficient, as is also their fountain, the blood. Epilepsy depends likewise upon debility, and the same scantiness of fluids, only here the debility is commonly of the direct kind. Fevers may arise from indirect debility, as in the confluent small-pox (*c*), or where drunkness has been the principal exciting noxious power applied; but at the same time, the most frequent cause of fever is direct debility. And in all these cases, debility is the primary cause and final termination both of the violent symptoms and the others.

CCI. Among the symptoms of disturbance sometimes also appear those affections of the

(*c*) The confluent small-pox, as depending upon a very high degree of debility, is ranked among the high fevers in the after part of this work, because the scale is not regulated by the appellations given by physicians, or by any of their erroneous distinctions, but by strict regard to the degree of excitement. And for the same reason is the violent cholera marked nearly in the same place; because the debility, taking place in it, is nearly equal in degree to the most sinking febrile debility; in a word, because the same degree of debilitating power produces, and the same degree of stimulant operation removes, the diseases so assorted.

head;

head; great head-ach in fevers, imbecility of intellect, confusion of thought, and delirium often sufficiently furious, though occurring in the highest degree of debility, and leading to efforts beyond the strength. This state often happens towards the end of typhus even when malignant. Inflammation is apprehended, blood is let directly from the head, blisters, which serve for *extreme unction* in the art of medicine, are clapped on, silence and darkness are prescribed, even the most gentle stimulants are forbidden. In consequence of the emptiness of the stomach, as well as of the vessels of the whole body, and of the great degree of languor from the want of many stimuli, vertigo is superadded to delirium, and the patient, deprived of strength, sense and intellect, breathes out his last.

CCII. But in this case there is either no inflammation, or, if there be, it is altogether of a different nature from the general sthenic one. That it is not the latter, the unsuccessfulness of the debilitating plan of cure, and the incredible success of that which first stimulates, and afterwards fills the vessels, afford

ford certain proof: And that it is not any other species of inflammation is evinced by the sudden restitution of health. Now, as an impaired use, or confusion of the intellectual faculty is, in a certain degree, always the consequence of debility, whether arising from any other source, or from emptiness of the vessels, and that too even in persons, who are otherwise healthy; where is the wonder, if, in the highest degree of inanition, compatible with life, in the greatest diminution of excitement, where scarcely a shadow of life is left, the highest degree of failure in the intellectual function, that is, delirium, among other instances of impaired function, should also take place? Nay this very fact is indubitably certain. For fasting, drinking water contrary to custom, after a course of hard drinking, or both eating and drinking to intemperance, a gloomy state of mind, grief, terrour, despair, not only induce temporary delirium, but frequently bring on downright madness. The same conclusion applies to any considerable loss of blood. For how many wounded persons, have not at all, or not till a long time afterwards, recovered

covered the use of their senses. To say nothing of contusions and other injuries, by which the texture of the brain is injured, as belonging to local diseases, of which we are to treat afterwards; how does cold prove fatal? Does not a delirium, in this case accompanied with a diminution of all the functions, precede death? From these weighty, numerous and authentic facts, which include all the powers, it follows that head-ach, every degree of failure of the intellect, and that highest degree delirium, by no means depend upon general sthenic inflammation, the only inflammation hitherto distinguished; but that they arise from the highest deficiency, both of other stimuli, and of a proper fulness in the vessels, that is from debility. Debility then is the most frequent cause of these symptoms, as is proved by the quick restoration of health upon the new plan of cure.

CCIII. But if ever the asthenic inflammation, mentioned (see CLXXI. and CCII) before, excites the tumult of symptoms, which are our present subject; it produces that effect in the same manner precisely, that debility produces it, by means of a penury
of

of blood and deficiency of other stimuli. For,

CCIV. The general asthenic inflammation is but asthenic diathesis, more violent in some one part than in any other equal part (see XLIX). The degree of asthenic diathesis constituting the inflammation is however by no means to be compared with the degree of diathesis in all the rest of the system; because the whole affection diffused over the whole body is far more considerable than that confined to a part (see XLVIII. XLIX. L. LI).

CCV. Inflammation, in this case, is only a state of the inflamed part, of the same kind with that of all the rest of the body. And, as the inflammation is constituted by a less excitement in some one part, than in any other equal part; so, before the establishment of the disease (*d*), of which the inflammation

(*d*) See above, par. CLXIX. and compare it with this. The meaning in both is, that, as certain parts of the system have more excitability than others (LI.), so those parts, which in the diseased state are more affected than any other, that is, are either more excited, as in
asthenic

mation is a part, a symptom, or sequel, the excitement of that part is understood to be proportionally lower, than that of any other part.

CCVI. This should be distinguished from local inflammation: It is general, and depends upon a general diathesis, and only takes place when the diathesis has attained to a certain degree; while local inflammation arises from some noxious power, that produces a solution or vitiation of the texture of the part, without regard either to diathesis or degree: The general inflammation is brought on by the same noxious exciting powers, which produce the general diathesis, only applied in

asthenic inflammation, or less, as in asthenic, than any other, keep up the same proportion of disparity before the arrival of the disease, before the appearance of any of the symptoms, and while, as yet, nothing but mere predisposition has taken place. The truth of this proposition is established by that of another so comprehensive as to extend to the whole subject of life; which is, that over the whole living creation, throughout the universe, health, predisposition to disease, and disease itself, are the same state, only differing in degree, (vide par. XXIII. and LXV.) Health, therefore, is also comprehended under this same proposition.

a higher degree; and the same remedies remove both the diathesis and the inflammation: The local inflammation depends upon noxious powers, that only injure a part, and it is removed by remedies that change the state of the part; but is not affected either by general noxious powers, or general remedies. Those inflammations, which accompany the gout, the putrid sore throat, the gangrenous sore throat, and sore eyes are examples of universal inflammation: Local inflammation will be illustrated by examples in its proper place (*e*): General inflammation is attended by debility over the whole system; which debility is only a sequel of the local, and that not always. To remove the former the general method of cure (see LXXXVIII.) is adapted;

(*e*) As in the inflammation, that is produced by a wounding instrument, when a person, previous to such an accident, is in health, and continues to be so after the accident. Or it may still be local, though a person is in bad health when it happens, but so, however, as that the general state of the health is understood to have no concern in it. A wound in a very tender part may induce disorder over the general system; but still all the symptoms can be traced to the wound, and not to the ordinary cause of general disease.

but

but the cure of the latter turns upon healing up the part. Thus there are four sorts of inflammation; two universal, a *sthenic*, and an *asthenic*; and two local, one of which is *sthenic*, and the other *asthenic*. The former often ends in suppuration, but is often dispersed without suppuration; the latter in gangrene, sometimes in *sphacelus*, sometimes in death. If, at the end of typhus (*f*) inflammation affects the brain or its membranes, which (*g*) is, however, not proved, or

(*f*) Or a low-nervous fever, which is a disease of the highest debility, next to the plague, and often not inferior to that disease in malignity, and, therefore, to be arranged in the scale, as next to that disease, which stands at the bottom of diminished excitement. Physicians have constantly confounded the different degrees of this disease with *sthenic* ones, affecting the pulse. But they are diametrically opposite, as shall be pointed out when we come to the proper place for such distinctions.

(*g*) Though strongly asserted. A professor in his lectures gives a case of a typhus fever, where, upon account of delirium and some other symptoms, thought to announce an inflammation in or near the brain, the patient was so freely bled, that the state of the pulse (which is said to have been, in his words, “a *pulsus vacuus* if ever there was such a pulse”,) forbid any further bleeding. The patient was given up, and the extraordinary

or very likely, this will serve for an instance of an asthenic general inflammation.

CCVII. As general sthenic inflammation is occasioned by a quantity of blood, stimulating the vessels by distention; by stimulating, increasing their excitement; by increase of excitement, producing more forceable and more frequent contractions; by these, increasing the tone of the fibres as living, and their density as simple solids, and thereby diminishing their diameters; and, consequently, causing the blood to flow with great effort through

nary physicians withdrew, leaving the ordinary one of the family, only, about him. This gentleman, from some impression on his mind, began to think, that another bleeding might be tried with advantage. He bled him, and the patient recovered. This is an account of a case that I pretend not to understand, and I believe it will be no less puzzling to my readers, and the more puzzling, the more sense they have. It is, however, brought as an example, that in a seeming expiring debility, the highest degree of asthenic diathesis, there may be an universal sthenic debility, that requires bleeding. I have mentioned it, not for the sake of information, but of caution, to the reader. Any person may see the frivolity and lightness of the theories of our profession, but it requires knowledge and discernment to guard against the seduction of facts.

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the contracted vessels, and to produce pain from the force of the contractions and the narrowness of the space through which it has to pass; and as the same, though in a less degree, is the cause of sthenic diathesis over the whole vascular system, whether red or colourless: So,

CCVIII. The cause of general asthenic inflammation is also abundance of blood in the inflamed vessels, producing the same effects in the inflamed portion as in the sthenic inflammation; and, notwithstanding the penury of blood in every part of the vascular system besides, flowing abundantly into the inflamed vessels, upon account of a greater atony and laxity in them, distending them and producing the phenomena peculiar to all inflammations (*b*).

CCIX.

(*b*) These definitions apply to all the four inflammations (par. CCVI.) with respect to the state of the inflamed vessels; their differences only depending upon the general state of all the rest of the vessels, which in the local, may be quite the healthy state of these, while, in sthenic general inflammation, it is the sthenic, and in this, the asthenic diathesis, that are conjoined with the inflammatory state. Further, as their cause is influenced

CCIX. As the indication of cure for the former is, to diminish the quantity of blood, which is the first cause of the violent exertion, and, thereby, to reduce the excessive excitement to the healthy degree, and the excessive contractions, which constitute the exertion, to such moderate contractions, as are pleasant and agreeable to health: So

CCX. The indication of cure for the latter is, first, by powerful stimuli to propel the blood in every part of the system, that the portion which loiters in the languid vessels of the inflamed part, may be also propelled, and the vessels relieved of their burthen; and then by the gradual administration of seasoned animal food, in the form of soups, and, when the strength is recruited, in a solid form, to replenish the whole system of vessels.

CCXI. The local inflammations will be treated of afterwards, each in its proper place.

by these general circumstances, so also is their cure; the sthenic and asthenic general inflammations requiring the remedies of the diatheses to which they respectively belong, and the local only the remedies suited to heal up the part.

CCXXII.

CCXII. That inflammation of the throat, which ends in what they call a putrid (i) sore throat, is singularly insidious. During the first days it differs little in its appearance from the sthenic sore throat. The general symptoms are also similar. The pulse scarce exceeds the measure of the sthenic pulse in its frequency and other characteristics. For some time the whole disease proceeds with gentleness and tranquillity, excepting that a constant rejection by spitting of a tough mucous matter is troublesome. At last, if it is not counteracted by the most powerful stimuli, a period arrives, when all the symptoms suddenly become alarming; when the pulse becomes very quick, very weak, and remarkably small; when the strength, over the whole system, sinks; and now it is not a

(i) The disease, here mentioned, is neither described, nor, seemingly, understood, in medical books and lectures. In this work it is taken, as every thing else is, from nature, at the bed-side of the sick, and deserves so much the more attention, that, though it is a disease of the utmost malignity, it seems to have been altogether overlooked. Its appearances are mild at first, but, without both skill and attention, it will end fatally.

moderate portion of diffusible stimulus that will prevent the lamentable fate of the greatest ornament of human nature (*k*). The best plan of cure is to prevent the mortal period by employing the most powerful stimuli.

CCXIII. The diffusible stimuli are so powerful in removing the inflammation of the gout, that, sometimes, strong liquors, as wine, and spirits, or spirits diluted with water, as warm as can be borne, have in a few hours removed the most violent fit, and restored the use of the affected foot. The same remedies are of equal efficacy in removing the general symptoms (*l*).

CCXIV.

(*k*) All this refers to a lady in Scotland, of singular worth and amiability, who died, but not in consequence of the plan of cure, which this doctrine enjoins, having been followed; especially at the period of the disease when it was most wanted,

(*l*) Treated in the way, here and formerly (vid. the pref.) mentioned, the most violent degree of the disease always gave way in a few days, and milder cases in as many hours. From hard walking in very hot weather to inspect the beauties and majesty of Hampton Court, I have myself very lately had a slight fit of the gout; but it gave me no sort of trouble, never hindered me from business, and I repelled it in less than thirty-six hours.

CCXIV. The inflammation in the gangrenous fore throat is not, according to the common opinion, a primary affection; but, like every other general asthenic inflammation, depends upon the general diathesis, which, in this case, is manifestly asthenic, being a part or symptom of the diathesis, when that has attained an high degree.

This inflammation has nothing in common with the sthenic general inflammation, which

hours. I never found a single case baffle me but one, where the patient, who, with his valet, had quacked himself into the gout as well as other complaints, and particularly an habitual costiveness, by forcing every passage by the belly, for the space of seventeen years. I was dismissed, without having my directions complied with; and without being allowed to accommodate the remedies to his practice of purging and throwing up injections, so as to endeavour, at least, to prevent or mitigate their hurtful effect. For, it must be observed here, that, as every directly debilitating power is an exciting hurtful means of bringing on any asthenic disease, so the effect of every evacuation, and particularly that by the belly, is well known to be a certain means of bringing on a fit of the gout. Among many other means of inducing that disease, a single dose of Glauber's salt, though that be but a mild cathartic, will bring a fit of the gout on me at any time.

distinguishes

distinguishes the sthenic inflammatory sore throat (*m*), or with the two local inflammations.

CCXV. The crowded pustules, in the small-pox, when it is converted into the confluent kind, that is, into an asthenic general disease, become partakers of the new diathesis, and, instead of sthenic, which was their first state, become asthenic; and, as by their local stimulus, they before quickly changed the sthenic into the asthenic diathesis, by inducing indirect debility; so now, by the debilitating influence of their asthenic nature, they establish asthenia, or a state of de-

(*m*) Yet in their systems of nosology, which are laboured volumes of distinctions without differences, begun, within this half century, to be superadded to the former modes of systematizing; which, without this new one, had sufficiently disgraced the art, and needed no more than the most absurd of the whole, or that the misfed fancy of men could invent, to complete, in all its compartments, the vast fabric of error, and particularly in the last of these, that published in Edinburgh, the putrid sore throat, as described above (CCXII.) was left out, and the gangrenous, which is that just now alluded to in the text, conjoined with the common sthenic sore throat, though diametrically in its nature opposite to it.

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bility over the whole system, which they afterwards aggravate, till death often ensues (*n*).

CCXVI. To throw light upon these two species of small-pox, by comparing their respective methods of cure, it may be observed, that the treatment in the one case should be quite different from that in the other (*o*).

(*n*) There cannot be a more exquisite stimulus in living nature, than that universal cake of inflamed pustules, which covers the whole surface in the confluent small-pox. It is no wonder then, that, when it is superadded to the ordinary stimulant hurtful powers, to which this disease first owes its violence, and afterwards that very eruption; the united effect of both should soon pass the whole range of excessive stimulus, and quickly run into the state of indirect debility (see par. CC.). Such is the nature and progress of the small-pox, in passing from the sthenic into the asthenic state, that is, from one disease into another of a most opposite nature.

(*o*) The cure of the distinct small-pox is the debilitating; that of the confluent, the stimulant plan. The cause of the former is sthenic diathesis, that of the latter the asthenic, occasioned by indirect debility; which is a distinction unattended to in general, and with very bad effect upon the practice. For, when the confluent small-pox is established, the pustules flat, and signs of mortification coming on, the covering the patient with a single sheet is as common as in the distinct small-pox.

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The remedies of the distinct small-pox, and of its accompanying eruption, are cold and whatever, by evacuation or otherwise, debilitates. The remedies of the confluent kind, as well as of its accompanying eruption, are heat, short of the indirectly debilitating degree; and all the powers, which stimulate as quickly, and as powerfully as possible, and, consequently, the most diffusible.

CCXVII. They differ besides in this, that all the hurtful powers in the distinct kind are sthenic; all in the confluent asthenic. And this distinction equally applies to both diseases, and both eruptions.

CCXVIII. And as the sthenic or distinct pustules have a direct tendency to produce a sthenic inflammation, and kindly suppuration; so the tendency of the asthenic or confluent, is as directly to gangrene, sphacelus, and death.

CCXIX. The boils, carbuncles, and buboes, which often accompany the plague, and sometimes typhus, arise from a contagious matter, taken into the body, and detained with the perspiratory fluid, under the cuticle, and in the glands. The cause of the detention,

detention, and, therefore, of this eruption, is a total cessation of motion in the extreme arteries, especially the glands and perspiratory terminations, upon account of the universal debility, and the very great languor of the heart and arteries. This appears from several circumstances: 1. there is no eruption during the period of predisposition, when some vigour still remains, and, therefore, the perspiration goes on in a certain degree; 2. there is none in cases of sudden death from the violence of the disease; 3. no eruption or disease in all the cases, where these are early prevented by the use of the more powerful stimulants; 4. the disease is always mild, and the eruption always sparing, in proportion to the proper management of the stimulant plan of cure. For, whether the suppression of perspiration be the consequence of a very great degree of the sthenic diathesis, or of an equal degree of the asthenic as in the present case; all the foreign matter, that should be thrown out of the system along with the perspirable matter, is, together with it, detained; and when so detained below the cuticle, by stagnating, and acquiring

acquiring a more acrid nature, it produces local inflammation, either of a sthenic or asthenic nature, in proportion to the different nature of each, or rather of the habit.

CCXX. In the same manner is that eruption which diversifies the skin in the gangrenous fore throat to be explained; as well as another, which supervenes in that state of the small-pox, which by reason of the debility of the system, would otherwise turn out well; but which, if the new eruption be not opposed by the most powerful stimuli, is sure to end in death. Both these eruptions (*p*) are spotted, both red; one is marked by smaller, the other by larger spots: in this the colour is a fine scarlet, far exceeding all art, and almost the power of nature herself to produce in any other circumstances. Both

(*p*) A young child of mine, who had been long weakly, and often, in consequence of that, snatched from the jaws of death by being properly supported, according to the principles of the new doctrine, had been prepared to receive the small-pox, and inoculated. After the eruption was completed, and it was now certain it would be exceedingly moderate, one morning he was brought before me covered over with the appearance of the eruption described in the text.

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are owing to a suppression of the perspiration by debility: the former is removed by the stimulant plan of cure, which removes all the other symptoms; in the uncommon eruption, the debility produced in the preparation, to render the small-pox mild, must be opposed, as soon as the eruption appears, and the strength must be restored by the use of the most diffusible stimuli: The pustules, which are few, do not even attain to the measure of actual general disease, and are, therefore, unattended with danger, and not to be regarded. If this practice is followed, the recovery is both certain and quick; but, if it be neglected, or if a contrary plan of cure be adopted, death is inevitable (*q*).

CCXXI.

(*q*) It is certain, that the safe conduct of the small-pox depends upon debilitating the habit which is to receive the infection; and it is as little doubtful that we may carry that operation a great way, by lowering the diet, purging the belly, and applying intense cold to the surface, and, by all means, guarding against all alternation with heat. By this means the phlogistic diathesis, chiefly arising from the ordinary powers, and in part, as it would seem, from the contagious matter, is prevented or removed; the great flow of the fluids to the surface checked; and the diameters of the perspiratory, as well as of
all

CCXXI. Heat is not peculiar to *sthenic pyrexia* (*r*), but belongs also to other *sthe-*

all the other vessels, kept open and patulous. But it had been long a question with me, whether this debilitating operation might not be carried too far. If it be certain, as it is, that extreme debility suppresses perspiration, surely the process pushed near to that degree must endanger that event. This phenomenon happening to my child, solved the doubt that I had not yet decided, and it seemed to be in perfect conformity to the principles of this doctrine, to understand, that, as this child had been formerly weak, and, perhaps, still retained some degree of that state, the further weakening him by the preparatory management, for the better regulating this disease, had been carried too far. A surgeon happened to be by when the child was under examination; I asked him if he had ever seen such a case, for I had neither seen, nor heard, nor read, any thing like it. His answer was, that he had seen three, and all of them fatal. I knew how that would happen, that is, that they would continue the debilitating practice they had been following. On the contrary, I ordered the child spirit and water, and a little of an opiate, then restored the meals that had been taken from him, and brought him about to his perfect health (for the small-pox gave no trouble) in twelve or sixteen hours.

(*r*) *Pyrexia* is the word for *sthenic* diseases affecting the pulse, called febrile, or fevers, very improperly, while the term fever is reserved for the high *asthenic* diseases that have been confounded with the *pyrexia*.

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nic diseases. Nor is it so confined to the diseases, as not also to arise in all the degrees of predisposition in proportion to the degree (*f*). Nor is this all. Heat also attends all asthenic diseases, whether febrile, which is a distinction without any good meaning, or not febrile, and also the predispositions to them all, in proportion to the degree of debility. There is not a more certain mark of the decline of a disease, whether sthenic or asthenic, than a return of that temperature, which is commonly called cool, to distinguish it from morbid heat.

CCXXII. The heat is then only natural, when neither diathesis is present. From that point it increases, through all the degrees of

(*f*) That heat takes place in predisposition, is a matter of daily observation. Thus, when a person has no other symptom of disease, it is often remarked, sometimes by himself, sometimes by another, who may have happened to feel his hands, that he is certainly not quite well as his hands are hot. When this heat happens, either in the hands or feet, without any cause to account for it consistently with health, it is a sure prelude of disease, that is, a sure mark of a considerable predisposition to disease: and the kind of disease, of which it is the harbinger, is oftener asthenic than sthenic.

increased excitement, till indirect debility, from excess of stimulus, is established; and it increases in proportion to the degree of excitement, rendering the perspiratory vessels always less and less patulous. It also increases through all the degrees of diminished excitement to a certain boundary, which is fixed by a cause by-and-by to be explained; it increases in proportion to the degree of decreasing excitement, though the latter all along renders the perspiratory vessels more patulous; and, thereby, among other effects, diminishes the motion of all the vessels, and particularly of the perspiratory.

CCXXIII. When the heat has attained its highest degree, and the debility has increased in proportion, it is at length in the extremities, and then gradually in the rest of the body, succeeded by cold. This is a bad sign. In the progress of debility motion begins to be very languid, first in the small vessels at the extremities of the limbs, and then it ceases altogether. Hence, as animal heat, whether in due proportion, or in excess, depends upon the due, or to a certain degree deficient or excessive, motion of the blood

blood and other fluids, the heat of the body, in the present case, almost entirely disappears; that is, the effect, according to an universal law of nature, subsides along with the cause. The same thing happens in both extremes of excitability, that is, of excessive abundance in direct, and of great exhaustion in indirect debility; for, whatever be its source, debility is always the same.

CCXXIV. As in sthenic diseases the excitement is for the most part much and equally increased over the whole body; the heat is also equally diffused. To this, the only exceptions are, 1. where the violence of the disease produces indirect debility in certain parts, as in the stomach, in which sickness indicates the near approach of that state; or 2. where direct debility comes on from the debilitating plan of cure having been pushed too far. But, so long as the sthenic diathesis prevails, and supports a high excitement, the heat will almost always be equal.

CCXXV. The same thing happens in moderate debility. Accordingly, through the whole course of predisposition, and in all cases short of almost a total cessation of motion,

the heat is pretty equal. The effect of cessation of motion has been explained. But, before that happens, if any inequality of heat occurs in diseases of moderate debility, as is frequently the case in the hands and feet; the reason is, that a greater degree of debility has been induced upon those parts, than upon others; by cold, for instance, labour, or sweating, any way excited, especially when the sweat has been cold and clammy. Not only in the gout, but also in other affections both of direct and indirect debility, a burning heat, chiefly distressing to the soles of the feet, torments the patient, especially in walking. That this arises from debility, checking perspiration, is proved by fatigue, cold, and other debilitating powers proving hurtful to it; and heat, rest, and other stimulant powers, giving ease.

CCXXVI. It remains now to explain, how too great excitement, in high sthenic diseases, impairs some functions without a debilitating operation; and how too small an excitement, in violent asthenic diseases, seems to increase some functions, though the appearance is always fallacious.

CCXXVII.

CCXXVII. If, in peripneumony, synocha, and violent rheumatism, the voluntary motions are impaired to such a degree, that a person can use neither his hands nor his feet, any more than a paralytic person; this is not owing to debility, or diminished excitement, whether directly or indirectly (*t*), as is evident

(*t*) When the excitement is at 40 all the functions are performed in the best and completest manner. Above that there is more force through all the steps of predisposition, but with less durability and steadiness; which is exemplified by the comparison of hard labourers, who at the same time are well supported, and gentlemen, who live well, without using a proportional degree of labour or exercise to prevent a luxuriant state of vigour. When two such persons are subjected to a comparative trial of their vigour in any exertion, the former will be found to go through the exertion with more steadiness, and to hold out longer and better than the other; even though his first efforts may have been inferior in force to those of his antagonist. And the reason is evident; a moderate and proper degree of vigour, will bear an addition of stimulant operation longer than a higher degree of it approaching to morbid state; because the distance of the excitement from indirect debility, which puts an end to excitement, is greater in the former than in the latter case. The difference in the well-supported labourer is 30 before he can reach an increase that leads up to 70;

dent from this double proof; 1. if the apparent debility were real, stimulants would be of service, and 2, debilitating remedies of disservice (*u*). But the reverse is the truth. For the same debilitating powers, which cure the other symptoms of confessed excessive excitement, also remove this indisposition to the performance of motion; and the contrary powers increase the affection.

CCXXVIII. Again, in spasms and convulsions, whereas that of the gentleman is perhaps not more than 20. The exertion in the struggle adds stimulus; which will be better borne by him who has least and yet enough, than by him who has more, but of a superfluous degree, and more liable to run into the extreme of a cessation of excitement. The effect of the exertion in the labourer will be to carry him soon up, by its stimulant operation, to the degree of excitement where the gentleman began, suppose that to be 50, and perhaps by and by to 60. But the same stimulus of exertion in the gentleman will have the effect of first mounting up to 60, and by and by to 70, where the excitement begins to cease.

(*u*) Who would administer wine, opium, and the other high stimuli, whether durable or diffusible, to cure the inability to perform motion in either peripneumony or that rheumatism which is highly sthenic? Or rather who would think of any other means of removing that symptom, than the debilitating powers, so effectual in removing all the rest, and not less so in removing it?

vulsions,

vulsions, either of the involuntary motions in the internal parts, as in dyspepsia, in colic, in dysentery, in cholera, in hysteria, in violent vomiting or diarrhœa, (great numbers of which affections happen every day, without being distinguished by names); or in the burning affection of the alimentary canal, which is considered by physicians as an inflammatory affection; or in affections of the voluntary motions externally, as in the lock-jaw, in tetanus (*x*), and in many spasms of other

(*x*) Tetanus is a violent spasmodic motion of the muscles of the head, neck, and upper part of the thorax, whereby the head is kept immoveably in the same position, in which it had been found upon the coming on of the spasm. The teeth also, from the affection occupying the muscles of the under jaw, are kept immoveably locked, and hence the name of lock-jaw. Besides the affection of the muscles, that has been mentioned, there is scarce one muscle in the whole body, free from one degree or other of the affection. Further, there is a most painful feeling over all, but especially in the parts most affected. This disease sometimes happens in cold countries, such as this, in consequence of a wound in any sensible part, or when small bones, as the ossa spongia, are bruised, crashed and dashed into the softer parts. The part of it called lock-jaw is frequently a

other parts ; or in convulsion, epilepsy, and many other similar affections ; if the functions seem very much increased, this is not owing to increase of strength, that is, to increase of excitement, as will appear to any unprejudiced judge from the following twofold consideration ; 1. if this were a case of

symptom in fevers. But the disease is more frequent in warmer countries than this, as in the south of Europe, where the excess of heat is liable to run into indirect debility. It is most frequent of all in the torrid zone, where indirect debility is the most constant attendant on heat. As a violent and permanent contraction of the muscles was the most striking symptom of it, and systematic physicians supposed every such contraction the effect of an increase of excitement, or, to use their own words, an increased influx of the nervous fluid or nervous power into the parts affected ; consequently their indication of cure was to relax the rigid contracted parts. Hence no bounds were set to their emollient relaxing measures. Such were bleeding, other evacuations, and warm bathing. But experience soon taught, that all these increased, instead of removing the disease. Of late opium, because it was thought a sedative, was tried. The trial succeeded. But immense quantities of that medicine were found necessary to effect the complete cure. Laudanum used to be thrown in without measure, or any other rule, but to give it on till the disease ceased.

really

really increased strength, debilitating powers, or the remedies of sthenic diathesis, would remove it; and 2. stimulants not proceeding to their ultimate effect of inducing indirect debility, but confined within that limit, in which they remove asthenia, would increase it. But the truth is just the reverse (*y*). For stimulants alone, which remove the other signs of acknowledged debility, also remove these spasms and convulsions; and debilitating powers increase them or change the disease into a worse (*z*).

CCXXIX.

(*y*) Who does not now know, that bleeding, and evacuations of other kinds are hurtful, and that stimulants proportioned to the degree of the cause, are the only successful remedies?

(*z*) A certain gentleman in his desk, speaking of the method of curing epilepsy or the falling sickness, and recommending, among other evacuant and otherwise debilitating means, small but frequently repeated bleedings, unguardedly contradicts himself in his very next sentence. "However," says he, "we regular practitioners are liable to be too cautious and even timid sometimes. For I have known a bold practitioner in the country, who cured an epilepsy by very profuse bleeding. In a few months after the patient died of an universal dropsy, but the epilepsy never returned."

I would

CCXXIX. As we know not what contraction is (and we are indeed ignorant of the manner in which every function of the living system (*a*) is performed) we shall not dispute whether

I would ask this gentleman, what sort of a cure that was, that converted a disease, which may come and go for many years, nay even for a long life-time, into one that, in a very short time, proved fatal? What reason would a podagric have to thank any one, who should convert the gout in him upon any violent attack, into a fatal dropsy? That sort of treatment is not curing a disease but increasing it, and that even to death. The convulsive symptoms of an asthma may pass away; but the asthma remains. You may cease to call it epilepsy; but dropsy still shows that the cause of the disease remains, nay is prodigiously increased. This fatal mistake of an increase of the disease upon the whole, for the cure of an inferior degree of it, proceeds from an improper use of directly debilitating powers in place of the proper stimulant ones. But there are cases, where the last, by being carried too far, produce the same fatal mistake. Thus in peripneumony, to get rid of the hard pulse, and the acute pungent pain (see above, CLXXIV. and the notes), the bleedings are carried so far as to produce a fatal hydrothorax, or dropsy of the chest.

(*a*) This is, perhaps, the first philosophical performance in which care has been taken to keep clear of abstract causes. The prosecution of them has contaminated almost every department of knowledge that had been treated

whether it be an increased or diminished function: we shall however by no means allow these spasmodic and convulsive motions to be any other than an impaired function (*b*); for, if, within certain boundaries, excitement, when increased, produces more strength, and

treated scientifically. See the introduction to my Observations on the principles of the old Systems of Physic, &c. where it will appear, that even the great sir Isaac Newton did not altogether avoid this error, especially in the questions he put, however modestly, with respect to an all-pervading æther; the wanton and aerial theoretical fabrics that have been raised upon which, have, in spite of lord Bacon's better directions, disgraced the philosophy of the middle of the eighteenth century. Compare what you will find in that book with the III. Chap. paragraph XVIII. in this.

(*b*) I know not what the abstract state of muscular fibres is, either when they contract and relax with rapid, violent, and morbid force, or when they remain immovably fixed in one forcible permanent contraction: But I know, that nothing but debilitating powers produce these effects, and nothing but invigorating ones remove them, which is enough for me, who mean to prove myself a sure and cautious observer of the phenomena of nature; and in my practice as a physician, to avoid, after the example of many others, groping in the dark under the guidance of abstract reasoning, but to view every subject of observation by nature's clearest light.

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less when it is either diminished without limitation, or excessively increased; and if every function so arising is properly defined to be either a function increased in proportion to the increase of excitement as contained within its boundaries, or as a function diminished in proportion to the deficiency of the same excitement, without limit, or to the ultimate increase of exciting power beyond the stimulant range; in the last of these cases it is a most proper definition to say, that the function is diminished; and in the first, that it is increased (*c*).

CCXXX.

(*c*) In the spasmodic and convulsive state of the function of motion, when compared with the vigour of the same function in its healthy state, who would say that the former is greater than the latter? The healthy and vigorous state of motion consists not in the degree of contraction, but, with a certain degree of that, in the well proportioned alternation between contraction and relaxation; of which we have proof indisputable in this mode of motion being best performed in that middle state of vigour, that intervenes betwixt the extreme of the healthy, or moderately increased vigour, and the other extreme of direct or indirect debility. The increase of vigour and excitement keep pace to a certain extent, even through some degrees of morbid excess of the latter: but a period, and that short of indirect debility, arrives,
as

CCXXX. The notion, therefore, hitherto received with respect to these motions, is false.

as in peripneumony, where the excitement is increased beyond the healthy state, and must be reduced in order to restore the due healthy vigour. There are other cases, as that of mania, or sthenic insanity, where the conjoined increase of vigour and excitement will still go further. But in every case the increase of vigour, still judging of it from its effects in the healthy state, ceases before that of excitement; and, perhaps, we may make a step towards finding the boundary, by observing, that the greater the sum total of excess of exciting power is, the sooner does the point arrive, beyond which the vigour does not proceed. In peripneumony it ceases at a certain period of the disease where the salutary effect of bleeding and other debilitating means shows that the increase of excitement is still going on. But here the sum total of excitement, considering the state of all the other functions, is greater than in mania, where the function chiefly increased in vigour is only that of voluntary motion, while all the functions of involuntary motion are very little affected. From this investigation we can clearly discern, that every increase of excitement leads to a morbid increase of vigour, and that there is, somewhere or other, a point in the scale of increasing excitement, and below the point of indirect debility, where the vigour is no further increased; and this inference arises with respect to the practice, that we should be very observant of both facts, as pointing out a very material distinction in the indications of cure; that
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false. It goes upon the supposition (*d*), that the motions proceed from an excessive influx of the nervous fluid, according to the first manner of expression (*e*), or of the nervous power

in indirect debility being to stimulate, while that at the cessation of vigour is to continue to debilitate till the sum total of excessive vigour be reduced to the proper and healthy. The inability to the performance of motion in peripneumony is an instance of the latter; that of the conversion of the same disease from excess of debilitating cure is an instance of the former.

(*d*) Indeed they have talked so confidently of it, that they may more justly be arraigned of going upon a *petitio principii*, or that error in logic, where a point chiefly required to be proved, is taken for granted, and made a ground work of other reasoning.

(*e*) From a microscopical observation of Leuenhoeck, where he once thought he saw a hollow cavity in the nerves (but could never see it again, nor any body after him, though that instrument has been infinitely improved since his time), the celebrated Dr. Boerhaave took his noted intertexture of vessels, making the whole mass of living bodies consist of such. The functions were, at that time, supposed to depend upon an inelastic fluid secreted in the brain, and distributed in the cavities of the nerves, to every part of the system. Much reasoning has been employed in refutation of that beautiful, though fanciful, system. But the only reason, that should have been employed against it, was to deny the

power (*f*) as they now speak ; that is, if the words have any meaning, from an excessive ex-

the truth of the hypothesis upon which it was built ; and that negative argument might have been supported by this positive one, that it is now known, that the nerves are solid substances, and not hollow tubes. The next theory that was taken up was, that though the nerves were solid substances, yet they were porous, and, therefore, fitted to receive into their pores an elastic fluid, like the electrical, the magnetical, and like, or rather a modification of, the supposed æther of Newton ; that this inelastic fluid also floated upon the surface of the nerves, and formed an atmosphere around them, and by it all the functions of living systems, even those of the most perfect, the human, were explained. For a full account of it see the Preface to the Observations on the Principles of the old Systems of Physic, from page 19 to page 58. Among other applications of the æther, under the denomination now of nervous power, one was to make its influx into the muscular fibres affected with spasm, or convulsion, the cause of these morbid motions ; as its influx, as an inelastic fluid, into the hollow cavities of the nerves, had been before supposed to afford the same explanation.

(*f*) That was their word, after an ingenious philosopher in Edinburgh, whose dissertation upon this subject is given at full length in the place of the Observations referred to, had ridiculed them out of their æther.

citement

citement in the fibres (g). Now as, according to the logicians, “error draws on error;” so this false notion of the abstract cause led to another mistake with respect to the operation of opium. And as they senselessly enough supposed excessive motions to be occasioned by an excess of the principle of life, at least in the labouring parts, so they either thought, or taught, that opium possessed the virtue of checking or allaying, as a sedative, these motions; an hypothesis contrary to the whole analogy of nature, and to the certain proof afforded by all the exciting powers, every one of which has been proved to be stimulant, not one sedative; but though it should be a question whether there be not in nature, or among those powers, that are commonly applied to animal bodies, something sedative,

(g) It is here to be observed, that the change of the theory here has led into a vagueness of terms. It might have been proper, had the notion of either an inelastic, or elastic, fluid, been retained, to have called the supposed cause of the function a fluid, and to have talked of its influx as such; but now that we know nothing about it, or whether it has any existence at all, to call it a power, and yet to talk of its influx or efflux, its flowing in or out, is surely vague and incoherent.

how

how can there be any uncertainty as to the stimulant power of opium? Has it not the same effect upon the Turks, that wine has upon us? Or, are we to suppose, that the troops of that people, on their march to battle, chew opium, to check their natural alacrity and to depress their courage? If fevers, if the gout, if indigestion, if the colic, if asthma, and the whole train of spasmodic and convulsive diseases, in fine all asthenic diseases, have lately, to the conviction of every person who has given the subject due consideration, and, contrary to the expectation and opinion of all men hitherto, been proved to yield to the various forms of opium without difficulty; and if all the diseases, in which it is serviceable, have been demonstrated to be affections depending on debility, are we to allow that opium proves of service, by an operation that is further debilitating, or rather that extinguishes the miserable remains of nature's motions? If various kinds of wine, and other strong liquors, have a very great effect in removing the same diseases, which has likewise been discovered by late experiments, and are, therefore, beneficial by the same mode of oper-

ation as opium, are we to allow that this similitude of operation argues a diversity, nay an opposition in the nature of the powers that agree, with such harmony, in producing the same effect? Lastly, if opium cures diseases, that depend upon a confessed deficiency of motion (*b*) as well as diseases in which the motions, though seemingly increased, are in reality diminished; what can be opposed to so cogent an argument, added to so many strong ones already advanced? In truth, opium is not a sedative; on the contrary, as it is the most powerful of all the agents that support life, and that restore health, and a

(*b*) In one fit of the gout, when its paroxysms were allowed to return, in consequence of a disrelish that I had taken for a certain stimulus of the drink kind, and, therefore, all at once abstaining from stimulus, I fell into a state of perfect inaction, and, though without feeling of pain or uneasiness, so devoid of muscular force, or capability of producing any motion or exertion, that even the slight degree of muscular contraction necessary to support my posture in bed failed. In that state, when my eyes were glazed, the whole dangerous paroxysm was removed by changing my drink into a more agreeable one; any strong drink would have answered, and opium of all.

truly

truly blessed remedy, to the divine virtue of which the lives of so many mortals have been owing, and, in future, will be owing; so it must be acknowledged, that spasms and convulsions, over which it has such great power, do not consist in increased, but diminished excitement, and that opium cures them by the same operation by which it cures any other of the diseases depending upon debility.

CCXXXI. Sometimes in diseases there is a preternatural flow of blood. Thus in sthenic diseases blood drops from the nose; is sparingly expectorated from the lungs; or tinges the urine. The first and last of these three are considered as critical signs; but they indicate only an abatement of sthenic diathesis, and a disposition to indirect debility. This effect, for the most part, soon goes off, leaving behind it a state of convalescence. Soon afterwards health is re-established, for indirect debility is seldom induced to any considerable degree.

CCXXXII. Great and continued discharges of blood, whether from the uterus, from the anus or its vicinity, or from the

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nose,

nose, depend upon pure debility (*i*). An overproportion of blood, violently distending the vessels, and establishing indirect debility, may sometimes be the primary cause. But, in this case, if no other debilitating, particularly no directly debilitating power, has co-

(*i*) These are the several hemorrhages of systematic and nosological authors. They have hitherto been supposed to depend upon sthenic, what they call phlogistic diathesis, and the particular discharge to be supported by an activity, an effort, what they call a molimen hæmorrhagicum, in the vessels pouring out the blood and the parts of the vessels immediately behind. Their continuance was accounted for upon the supposition of there being an overproportion of blood in the system, or what is commonly called a plethora; but they are all asthenic diseases, depending upon relaxation and atony both of all the rest of the vascular system, and particularly of the bleeding vessels, (see above, CXXXIV. *x*.) and, instead of a plethora, there is a penury of blood; all which is proved by the phenomena during the predisposition, when little food is taken in, and less, upon account of the weakness of the digestive organs, is digested; these circumstances are increased after the arrival of the disease. The pulse withal is weak, small, and frequent; and the patient puny and emaciated. The disease is increased by bleeding and other evacuations, and both relieved and removed by wine, spirits, and diffusible stimuli; a method of cure which, till within these fifteen years, would have startled all the physicians upon earth.

operated

operated with the cause; if the discharge be stopt by a stimulant plan of cure; if the body is strengthened, and the laxity of the vessels taken off, the whole affection will soon disappear, and health be restored. On the contrary, when indirect debility has not taken place, and directly debilitating powers have been applied; such as those just described, more especially, if the diseases are treated by bleedings and other evacuations, if abstinence, vegetable food and watry liquids have been employed; in this case the complaint becomes chronic, troublesome, and at last dangerous or fatal. That these affections depend upon debility, is proved by the failure of the debilitating, and the great success of the stimulant plan. The true cause of discharges of blood is not plethora, which cannot take place in the case of persons ill nourished, from water drinking, or the application of other noxious powers, that equally destroy the tone and density of the vessels (CXXXIV. and χ). For as food is almost the only material, from which blood is formed; how, when it is withheld—in the absence of the cause—can the effect remain? And,

if, from the debilitating effect of other noxious powers, the food that is taken is not digested, how can there be an over proportion, and not a manifest deficiency of blood?—But it may be alleged, that loss of blood, and every debilitating power, diminish perspiration, and that hence the quantity of blood is increased.—But how, I ask, can this effect be produced?—The matter, from which the blood is made, it may be answered, is taken into the stomach, and a smaller quantity of fluid passes off by perspiration,—But, 1, little food is taken in; and 2, that little is not digested (*k*); 3. after the serous part has been separated

(*k*) No idea in medical writings seems ever to have been formed of the body as a whole. On the contrary, nothing has been more common, than to talk of the functions as operating in a great measure, each from a cause existing within itself, or but slightly and arbitrarily connected with some other. This false notion was carried to its most ridiculous pitch in the doctrine of sympathy, and not rendered much more decent, after the word consent of parts came to be substituted in its place. Thus, the common expressions were the sympathy or consent of the stomach with the head, of the stomach with the face, of the stomach with the external surface, of the latter with the internal, and particularly with the intestines,

separated from the red, will it, if detained and carried back into the circulation, again become blood? Should these questions, to which there is no possibility of replying, seem to leave any room for doubt; are we to believe that one part of the body can be in such a state of vigour, as to produce an over proportion of blood, and another in so languid a state, as not to be able to discharge a substance derived from the blood, and afterwards corrupted by the due outlets? And must we, giving up our fundamental principle after so complete an establishment of it, allow, that the excitability is not the same, uniform, undivided property over all the system; that the powers acting upon it are not the same; finally that matter can be created out of nothing (1)? It is in vain to talk of the fatten-
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intestines, of the excretions with each other, of the feet with the kidneys, and so forth. It was never dreamed, that there was one over-ruling principle throughout, upon which all the functions depended. The stomach, for instance, cannot be strong while the perspiratory organs are weak, and therefore take in and digest too much while they cannot throw out their fluid.

(1) It has been proved in the IVth chapter of Part I.

ing of chickens and cattle by keeping them in a state of rest. The condition of health and

that the excitability is one uniform, undivided property over all and that, in whatever part of its seat it is acted upon, that action extends instantaneously over all; that though some parts, differently upon different occasions, may be more acted upon than any other, equal in size and nervous importance, that that is only in so insignificant a proportion as to have no effect in constituting an inequality of action in the system. Again the force of the powers that act is a given force, being either weak, in due proportion, or excessive, or weak again from ultimate excess. Their effect then upon the system, which receives their action in every degree in which it is communicated, and that with the utmost exactness, must always be the same, that is, either direct debility, health, sthenic diathesis, or indirect debility. To apply this to the present case, the stomach cannot be healthy, or under a predisposition to sthenic state, and thereby take in and digest, with the help of the other digestive organs, too much of the matter, from which blood is made; while the perspiratory vessels are too weak to perform their function of throwing off the excrementitious matter. On the contrary, the state of the stomach must run through the whole living system. If it can perform its functions properly, or in whatever degree it performs it, all the other organs of digestion, the upper part of the intestines, the biliary vessels, the lacteals, the veins betwixt their common trunk and the heart, the heart through all its cavities, the whole arterial system, and the

and disease is very different. In the former there is a certain latitude in the strength of the stomach; in the latter, and especially in diseases of debility, the digestive powers always suffer much. In fine, it is an universal and constant effect of debility, to produce a deficiency of the fluids in the internal parts of the system with a general relaxation of the vessels, especially about their excretory terminations, and a discharge of the fluids by some of the out-lets. When death happens

the colourless terminations of that system, whether exhalant or glandular, and the excretory orifices of these, the inhalants, and all the venous blood returned by the arteries, lastly, all the excretories upon the external and internal surface, all these will perform their functions in the same degree as the stomach whether properly or imperfectly. To promote the most perfect health all the exciting powers must be applied, each in its due proportion. And the want of any one or more may make some odds, which is insignificant to this point. If a person has not had his usual exercise a cheerful glass will prepare him for sleep. For want of the same exercise the appetite will be impaired, but so is the function of perspiration. Too much exercise under heat will impair the appetite, but it also impairs the perspiration after a person gets into a state of rest. In short, any slight inequality from want of any one or more stimuli can be made up by others. See above par. XLI.

during

during an entertainment, the event is not to be imputed to an over proportion of blood. That cannot be produced in so short a space of time. The liquor drunk has no effect in filling the vessels. Those only, who are in a state of direct or indirect debility, meet with such an end; never persons, who have an over proportion of blood; which, as the appetite of the former is gone, and the digestive powers destroyed, cannot be produced.—In what diseases was plethora supposed to take place? Not in disorders, in which the digestive organs, and those that produce blood, in fine, in which the whole system, are in a state of vigour; where the appetite is keen, the digestion perfectly performed, and the digested matter completely converted into blood; but in diseases, in which upon account of the debility propagated over the whole body, all the functions are in a state of langour, and in which the only matter, suited to make blood, is either not applied, or not assimilated. Thus, the gout, apoplexy, epilepsy, palsy, asthma and hysteria, indigestion in persons, who have been formerly addicted to luxury, those very diseases, which
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are our present subject, hemorrhages, as they are erroneously called, lastly, the far greater part of asthenic diseases, have been thought, at all times and by all physicians, to depend either upon plethora with vigour, or plethora with mobility. But in fact all these diseases, even those accompanied with discharge of blood, depend upon a penury of blood and upon other debilitating powers; this appears from the constant failure of the antisthenic plan of cure to the great disgrace of the profession, and from the incredible success of the new stimulant plan. As to discharges of blood, consider whom they affect; consider also the exciting noxious powers, and the symptoms. During the whole period of predisposition the patients are delicate and weakly; they have very little appetite, and what food they take, is ill digested, and often rejected by vomiting. In this weak state they are not supported by the stimulant operation of corporeal, or mental exercise; nor by that of high spirits, for they are quite dejected; nor by that of pure air, which they are not able to go out to take; nor by that of agreeable sensation; nor by that of strong liquors,

liquors, which from the wrong advice of their physicians, they look upon as poison; nor by that of the distention of the vessels, for these are not sufficiently filled with blood; nor by that of the secretory small vessels, upon account of their sluggish motion, and the universal stagnation of their degenerated fluids and the direct debility constantly thence arising. What sort of pulse have they? Such, as it is in all diseases of manifest debility; for instance, in fevers, (in which last, which is surprising, their favourite plethora was seldom suspected); small, weak, very quick, and almost empty. What is the state of their intellectual faculties, of their passions, of their bodily functions, of their powers of voluntary and involuntary motion? All are weak, all feeble, all such, as show, that they have not a third part of vital power to support them. What, on the contrary, is the state of those, who abound in blood, and yet never experience such discharges? They are strong and full of vigour in all their functions, have a ruddy countenance, sparkling eyes, strong, hard, and moderately frequent pulse. Their appetite for food is keen, the quantity they
take

take is large and well digested. Such persons may experience droppings of blood of no consequence, and yet not often; but they will have no discharges of blood. And it is in perfect consistency with all that has been said, to add, that the various forms of strong liquor, particularly spirits, are surprisingly efficacious in discharges of blood, in spite of contrary prejudices: But the preparations of opium (*m*) and the other diffusible stimuli are

(*m*) Opium, though much used in the cure of certain symptoms of diseases, was never understood by those physicians, who, in books and lectures assumed to themselves the province of directing the profession of physic. Every property they assigned to it was the reverse of the truth. Instead of allowing it to be the strongest stimulant in nature, they made it a sedative; and, though they found great difficulty in finding a single sedative more, to help to make out their catalogue of a class of such bodies in nature, they were confident that it was one (see above, CCXXX. and the notes). Another property they ascribed to it was that of bringing on sleep; whereas, it is the most powerful body of all others in producing and keeping up the watching state (see above, XXX. XXXI. note(*f*)). They also assigned it the virtue of allaying pain; but there is a kind of pain, that it increases, and, besides that, aggravates every other symptom of the disease. They never could deny, that opium was

are still more efficacious. This proves to a demonstration, that in discharges of blood there

was exceedingly improper in inflammatory diseases, that is, the several sthenic diseases with affection of a part whether inflammatory or catarrhal. And wherever they found it of service in pain, they might have perceived, that such pain was different from what they called inflammatory, or our general sthenic pain. The truth is; it is not a palliative of pain, but a remover of its cause, as often as that depends upon debility, while it as certainly aggravates every other. The pains, that opium is calculated to remove, are all these, that depend upon general asthenic affection, as those of the gout, of chronic rheumatism, that of the gangrenous, as well as the putrid, sore throat, all spasmodic and convulsive pains, all pains from pure debility, as in the legs, ankles and soles, or in any part of the skin, nineteen head-achs out of twenty, which are in that proportion asthenic; the pain of any deep-seated sore or gunshot wound after every degree of sthenic diathesis is removed from the habit. It is an equal remedy against the asthenic inflammation whether local or general, as preventing their tendency to mortification and sphacelus. Nay, when these latter states have come on, it is a most powerful means of removing them, and of correcting the degeneracy; for the effecting of which the bark had so often failed. All this is the discovery of the author of the *Elementa*, though the credit of the last and smallest part of it, from their ignorance of the high merit of the whole, they have shown a disposition to give another, a gentle-

there is no excessive activity, no hemorrhagic effort as it is called, but on the contrary, that there is a falling off of the natural moving force. Hemorrhages, then, which have been the subject of so much false explanation and false denomination, should be rejected from the number of sthenic, and transferred to the asthenic diseases, under the title of *Hæmorrhææ*.

CCXXXIII. If any person be seized with a cough at first rather dry and bound, then more moist and free, and afterwards accompanied with large expectoration; if the hoarseness at first is deep, and afterwards slighter, in proportion as the cough becomes more and more moist; if the chest all round, over the whole region of the lungs, is distressed with a degree of diffusive pain; if there is either no vomiting, or vomiting occasioned only by a cough with expectoration, and without any spontaneous tendency to re-

gentleman and eminent author in London. But a treatise on the gout, with a full account of all the virtues of opium, will soon be presented to the public, in which all this will be cleared up. Blessed as opium in all these cases is, it is equally bad in all sthenic ones.

turn ;

turn; if the strength is otherwise good, and the pulse strong, full, more or less hard, and not much exceeding the frequency of a healthy pulse: his case will be found to be sthenic, and to depend upon heat and stimuli. It is to be cured by cold and debilitating remedies (*n*). The cause of these symptoms is a high degree of sthenic diathesis over the whole body, higher on the external surface of the body, and especially in the throat, which is a part of that surface. These symptoms, in whatever case they occur, are to be explained in the same manner. Consequently, the catarrhal symptoms, which are essential to measles, admit precisely of the same inference; and, as well as the whole disease, are to be understood to arise from excessive excitement, and to be curable by the debilitating plan. The same judgment is to be formed of the influenza. In all which cases

(*n*) See CXVII. CXXVIII. CXXXIV. and all the debilitating powers throughout the whole chapter; while all the stimulant ones in it will be found to be such as contribute according to their degree of stimulus towards the production of the morbid effect, which makes our present subject.

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it is easy to ascertain the truth. Give a glass of wine or brandy or a little opium; the hoarseness will increase, the cough will grow harder and more bound, the expectoration will suffer a temporary suppression. Give a large draught of cold water, and all the symptoms will be relieved. It often happens that a person troubled with a cough shall sit down to drink wine, and be freed from his cough in the course of the circulation of the glass (o). The reason is, that asthenic diathesis was the cause of the cough; which diathesis the wine removed or changed into a temporary sthenic diathesis. Often at the end of a debauch in drinking, this kind of cough will return with great violence, because the sthenic diathesis by this time has made considerable advances. It may then be cured by drinking a tumbler or two of cold water, and relin-

(o) Whenever his cough is cured he should stop; as the carrying the stimulus too far will endanger the return of the cough from a very opposite cause. The cough at first, suppose, to be from an excitement as 26; its cure to be brought about by an excitement at or above 40; the return to an excitement at or above 60 will bring on a sthenic cough.

quishing wine: that is to say, by checking the excess of excitement.

CCXXXIV. From this account it appears, that certain symptoms, commonly supposed to be the same, are however of a diametrically opposite nature (*p*); as will be further

(*p*) This mistake of symptoms in consequence of judging of their interior nature from the similarity or dissimilarity of their appearance is the false idea, upon which the whole fabric of a department, lately introduced into the art of medicine, has been reared. It is to be observed, that symptoms the most similar to each other in their appearance are, in reality, the most different, and those, that have the least resemblance in their appearance, have the nearest affinity in their interior nature, and indeed are one and the same, with no other difference, but a difference of degree, and even that often very slight, sometimes next to none at all. The great variety of symptoms that distinguish the whole form of asthenic diseases affords as many proofs of the truth of this proposition, as the instances of dissimilarity or difference in opinion are numerous. What can be seemingly more opposite than diarrhoea and colic, than typhomania and coma, than epilepsy and general dropsy, than the cold and hot fit of agues, than spasmodic and convulsive affections compared with those in which there is no fault in the motions either as to excess or regularity, than the several degrees of morbid diminution of menstruation down to the actual suppression,

further evinced by a fuller explanation. If, therefore, any one has a violent cough, and great

sion, and the several degrees of the morbid increase of that natural discharge till its flow, at last, attains its ultimate excess both in degree and duration? And, with respect to febrile and non-febrile diseases, what can be more similar than a slight synocha or inflammatory fever and a typhus in the same degree, which, yet, are diametrically opposite both in their cause and cure? What can be more dissimilar than the various phenomena of fevers of the intermittent kind, through all their degrees of intermitting and remitting, and those of the more continued kind? And yet they all arise from causes highly debilitating, and are effectually removed by remedies equal in their degree of stimulus. In one word, to show the insignificance of the distinction of diseases into febrile and non-febrile, and, when the degree of debility constituting the cause in both, is considered and compared; is there any reason for separating the high dropsy, the high dysentery, and sinking cholera from their place betwixt intermittent and remittent fevers and the most continued kind? Lastly, what two things can be more like one another, than a crowded distinct and confluent small-pox; or than the common inflammatory sore throat, and that which was lately described (see above, par. CCXII.) Such have been the ideas, that have guided the directors of the art of medicine in their inquiries into the natures, causes and cures of diseases. If botanists and natural historians, by all their artificial methods of arrangement,

great expectoration, at first with hoarseness, and afterwards, through the whole course of the disease, without hoarseness; if he is of a very advanced age, or arrived at the last stage of life; if he is of a weak habit; if his pulse is neither strong nor full, but very quick; if this concurrence of symptoms has been preceded either by direct or indirect debility, as usually happens in the case of abstemiousness and water-drinking, on the one hand, or of a long course of ebriety, and a life of luxury, on the other; you may be certain, that all these symptoms are asthenic, and that they may be removed by stimulant remedies.

CCXXXV. The explanation of the dry cough is easy, and indeed the same as that

rangement, have made little progress in exploring the true nature of their subject, and on the contrary, with scarce a single exception, have confounded it; if it was ridiculous to unite into one genus a man, a monkey, and a bat, how much more absurd was the attempt to arrange the mere qualities of matter in the same way. Yet upon this hopeful employment has John Bull expended vast sums of money, while he left the most solid and important departments of science neglected and covered by the dirt under his feet. We have too little useful science yet, it is time to improve our scanty store (see the Introduction to Observations, &c.).

cough

before given (CLX.). The origin of the cough and of the expectoration is just the reverse (CXXVIII. CLXI. and particularly CXXXIV.) For whether the system has been weakened directly or indirectly, as the excitement over the whole body is extremely diminished, and the debility in every part is exquisite; the tone, and in proportion the density, will be every where diminished in the vascular system. The diminution chiefly takes place in the terminations of the arteries, that are most remote from the centre of activity, and above all other parts of the vascular system, in the perspiratory vessels (LIX. LX. LXI.). When all this has happened, the quantity of fluid thrown up by expectoration is incredible. Indeed, though it has never been attended to, it is not inferior to the greatest profusion that ever takes place in consumption, and even exceeds it.

CCXXXVI. The cure, however, in all the cases that depend upon direct debility, is by no means difficult (*q*), unless the disease
has

(*q*) I have experienced such a case more than once, and have seen and treated it in great numbers. It is some-

has proceeded so far that life is now approaching to its end. The cure, however, is a good deal more difficult in the case of indirect debility, because there is no other expedient

times a part of the concourse of symptoms, that form that asthenic case of disease, which is commonly called fever. A gentleman, under or about the thirtieth year of his age, had been ten days in a typhus fever, occasioned by extreme cold, succeeding to the debilitating effects left upon his habit by too great moderation in his diet, and, certainly, not a good choice of the different articles of it. To aid the debilitating effects arising from these, he had experienced all the extremes of heat and fatigue, that fall to a soldier's lot, in very warm countries. He was, over and above, of a small size, slender and emaciated. He had also, from his infancy, been affected with a short cough, sometimes dry, and sometimes with a little expectoration. During the treatment, he had been more than once bled, though his disease had ushered itself in by a profuse discharge of blood, which suddenly took him as he was on a journey in a cold day of about 44 miles in a carriage. He was vomited, purged, blistered prodigiously, and clystered. The whole force of the old plan of cure was exhausted upon him, and he so exhausted by it, as to be given up for an incurable of two diseases, a bad fever and rotten lungs. His face was hippocratic, he had the dead rattle, and his cough and expectoration were assiduous. By the stimulant new plan of cure he was put out of danger in ten days, and set upon his feet in as many more.

but

but stimulating, to remove a disease occasioned by excess of stimulant operation (CIII.). Nay, the same debility, as shall hereafter be shown, produces the same relaxation both of the bronchia and of the rest of the body, but it does not always produce consumption. With this profusion of expectoration appearing sometimes in the form of fever, sometimes in that of gout, the physician has often a long struggle with his diffusible stimulants; but he, at last, produces a complete restoration of health, and thereby leaves not the least suspicion of local affection in the lungs, which is so much the object both of the faith and fear of physicians (*r*).

I. When

(*r*) A description of this disease, in which the lungs are supposed to be affected with ulcers or tubercles, has been given in the note under this paragraph at (*q*). But, as the subject is both as new and interesting as any in this work, it may be proper to give a further illustration of it by the exposition of another set of facts. Both in persons liable to the gout, and other asthenic diseases, sometimes of direct, and at other times of indirect debility, and especially in those who have been much exposed to cold, without the debilitating effect of the cold being overcome (CXXII.) by an alternation with, or succession of, heat, and in very many old people, especially

I. When the fluids are not sufficiently agitated, they are proportionally more imperfectly

cially among the poorer sort, who have been, and naturally are, much exposed to various debilitating powers, there is often, especially in winter, a very great cough and expectoration. This sometimes goes to such a height as to give suspicion of the affection of the lungs just now spoken of. But the completeness of its cure, which, when it arises from indirect debility, is effected by the use of animal food, avoiding vegetable and fish, and by good wine and diluted spirits in moderate proportion at a time, but frequently repeated, avoiding claret and other french wines and all sour and all beer-drink, unless perhaps a little warm porter in cold weather, and a very moderate use of diffusible stimuli, keeping the feet and the body in general moderately warm; shows sufficiently, that there had been no local affection in the lungs. When the debility of the disease is of the indirect kind, in which the cure is more difficult, there is, still, as little reason to be apprehensive of the pulmonary or any other local affection. For the cure of it also proves the contrary. In it the means of cure are to change the forms of stimulus, and to proceed from the use of the stronger to that of the weaker, till at length the patient can do without much of the very strong ones. (See above, par XCIX. and those that follow). When the disease cannot be overcome in that way, the excitability must be understood to be worn out, and life come to its end; but still from general debility, not local disease. For, if ever any local

fectly mixed, and therefore in a vitiated state. But in the terminations of the vessels, which are at a greater distance from the centre of motion, they often stagnate, and undergo some change. This effect is not produced by heat only (CXV.), but by cold also (XVII.), and by all the powers that debilitate in an equal degree.

local affection does appear, it is always the last effect, not the primary cause. In this way I lost two gentlemen, after having been able to support them for many weeks, when the prognosis upon the common practice did not allow them as many hours. The cause of their indirect debility had been hard drinking. But even in those, who die of a confirmed consumption, there is not often reason for the suspicion of tubercles in the lungs. Their bodies have been opened after death, and the lungs found quite sound. And in the dissections, where the tubercles have been found, still they were only an effect.

C H A P. VII.

Of sleep and wakefulness, salutary and morbid—Sleep from lessened excitement—Ordinary stimuli produce sleep by gradually exhausting the excitability—Morbid sleep from direct and indirect debility—Healthy wakefulness how the effect of stimuli—Instances of morbid sleep—How stimulants cure both morbid sleep and watchfulness—No specific soporific virtue in opium—In what circumstances it induces sleep—Sleepiness attending affections of the alimentary canal—Good sleep, what.

CCXXXVII. AS death closes all the labours of life, so sleep closes those of every day: and, as the former is the consequence of a perfect extinction of the excitement, either from a complete exhaustion or extreme abundance of excitability; so the latter succeeds a diminution of excitement, during which the excitability is either, 1. only so far diminished that it can be accumulated again; or,

or, 2. so abundant, that the excess can be wasted ; and, in each case, the excitement restored.

CCXXXVIII. Such is the nature of the excitability of animals, that it can neither be deficient nor over-abundant, without detriment ; a deficiency producing indirect, and a super-abundance, direct debility. And, as any exciting power, carried beyond its boundary, (XXVIII.) produces the former, and the with-holding of any gives occasion to the latter ; the same proposition holds good of the excessive or too sparing use of any of them, or of all (*a*). Sleep, then, is the effect of our actions during the day, at first giving always more and more excitement, afterwards less and less, in proportion to the continuance of their operation, but so as always to afford some excitement, till the person arrives at that state, where the degree of excitement, necessary to the waking state, no

(*a*) This is completely illustrated through the whole first chapter of the second part, from par. CXI. to par. CXLVII. inclusive. Nay, the proposition is constantly alluded to through the whole that has yet been said, and will be in what remains to be said.

longer

longer exists. Of this we have the most certain proof in every day's experience, and in the common effect of all the exciting powers to produce sleep (*b*).

Thus,

(*b*) To illustrate this, let us take the exciting powers one by one, and begin with wine. When a person is insufficiently excited with respect to that stimulus, and rises not, suppose, above 30° in his excitement, a glass carries him up 2° , another 2° more, and so forth, till after five glasses, and their effect in carrying him up to 40° , he finds himself well and vigorous in all his functions. But, still, we are not so flimsily made, as not to bear a little of what is either too much or too little. Suppose him then to take five glasses more, and, consequently, to be raised to 50° , or 10° above the standard. As his spirits, his intellectual, and all his other, functions, were low, while his excitement remained below 40° , so they are all proportionally exalted by the time that his excitement is elevated to 50° . Let him still go on, and his intellectual function will rise still higher; he will now display the full extent of his genius; his passions and emotions, of whatever kind, will rise in the same proportion; he will, in one word, be an example of the effects of Alexander's feast. Suppose, to bring him to all this, he has swallowed, besides those he had before, other five glasses. Let him go on, till he has taken five glasses more, and we shall see the effect: In the course of time, employed in taking these, he gradually falls off in his spirits, in his intellectual, and in his

Thus, a certain degree of heat, food, drink, labour either of body or mind, and passion
and

his corporeal, functions; his tongue, his feet, his eyes, his memory, his judgment, all fail him; he, at last, becomes drowsy, and then falls fast asleep. The same is the progress of excitement as it arises from labour or exercise through the day, whether of mind or body. The same is the effect of the stimulus of eating, especially nourishing stimulant things, and in great plenty. Before dinner, the occupations of the former part of the day are not yet sufficient to prepare one for sleep; which, however, after a heavy dinner, will, unless the interference of some other stimulus prevent it, very readily happen to most people, especially to those, whose frailty, from age or any other cause, renders them more liable to be fatigued by the past operations of the day than others. The younger and more vigorous will be able to hold out to the end of the day; when they too, after having undergone the degree of stimulus necessary to give that waste of excitability that disposes to sleep, will be overcome by it. The very flow of the blood in the vessels, and the exercise of the involuntary motions, that keep it up, tend at last to the same effect. The same thing applies to the motion constantly going on in the stomach and intestines, as well as the motions that occur in all the secretory and excretory small vessels. Light, stimulating the eyes, and sound, the ears, and the several substances that act upon the organs of the other three senses, all tend, by wasting the excitability, to wear down the excitement to that point in the
scale

and emotion, when their stimulus neither stops short of the proper point, nor goes beyond it, all give a disposition to sleep. This is the most salutary sleep.

K. Premature, unseasonable, or morbid sleep, is produced by either indirect or direct debility.

A. With respect to the former, an excessive operation of any one or more of the stimuli produces it; accordingly, any one or more of those above mentioned, by acting in excess, and wasting the excitability, such as hurried drinking, produce that effect.

M. Of the directly debilitating powers, which produce the same effect, the want, or sparing application, of the powers, which, by a due degree of stimulus, induce sleep, will induce a bad kind of it; accordingly, when a person wants excitement in order to be in

scale where sleep commences. And the process, in every case, is, first a low, then a higher and higher, then the highest, vigour of all the functions; which, again, gradually falls till its termination in sleep. We have, therefore, after viewing their effects singly, to suppose them, in one degree or another, united, and sleep the finishing effect of their united operation.

health,

health, the defect of light, of sound, and of the bodies that excite the other senses, the defect of both sets of motions, the voluntary and involuntary, as well as of the exercise of the mind, of passion, of heat, acting in its stimulant degree, and too long continued sleep itself, all these produce hurtful sleep (*c*).

CCXXXIX. On the contrary, healthy wakefulness is the effect of the suspension of the diurnal actions during the period of sleep, which takes off more and more excitement, most at first, and less and less after, but always adds to the sum of diminution of excitement, and accumulation of excitability; that is, always continues to take off stimulus, till we have the degree of diminished excitement, and increased excitability necessary to the watching

(*c*) Coma, or an insuperable disposition to sleep, is most commonly owing to the want of most of the stimuli mentioned in the text, as those of food, of wine, at least in the ordinary practice of cure, of good animal spirits, of the power of thinking in a pleasant exciting train, of a due quantity of blood in the vessels, of pure open air, of corporeal exercise, and of the absence of certain stimuli, that otherwise irritate in the weakened state, and produce watchfulness.

state

state. In this way does sleep prepare the system for the waking state ; which is afterwards kept up, for the due length of time, by the several exciting powers, acting through the day, till at last, by a certain failure of their effect, sleep is produced again.

N. Too long or morbid watching is also brought on in two ways ; by indirect and by direct debility. Thus, intense thinking, violence of passion, excessive labour, unusual and highly relaxing heat, debauch in eating and drinking, great excess in the use of the diffusible stimuli, great abundance and velocity of blood ; all, or any of these, bringing on indirect debility by an excess in their operation, are notorious for their effect in repelling sleep. Again, cold, not in that extreme degree which immediately precedes death ; abstinence from food, or the use of food not sufficiently nourishing, or not sufficient to produce the requisite indirect stimulus ; weak liquids, as tea or coffee, especially when a person has been accustomed to stronger ; intermission of the usual exercise, whether of body or mind ; shame, fear, and grief ; all these, by their operation not sufficiently

ficiently approaching to indirect debility, produce an undue or morbid state of watchfulness.

CCXL. As debility, therefore, whether indirect or direct, or both conjoined, produce sleep, the first sound sleep, the two latter an improper or morbid kind; so an excess of debility, whether indirect or direct, is also a cause of improper or morbid vigilance. The only healthy sleep is that which is produced by a proper degree of excitement, occasioned by a proper action of the exciting powers upon the excitability; all the extremes of excessive sleep, or excessive vigilance, are either so many tendencies to disease, or actual disease (*d*).

A person

(*d*) Too much, or too long continued, sleep, is hurtful, because it implies a suspension of that excitement, to which proper health and due vigour is owing: it is, consequently, a state of direct debility. Too little sleep, or of too short duration, is of equal detriment, as implying a degree of excitability, not sufficiently accumulated to receive a sufficient impression from a renewal of the exciting powers. From the former arise most of the complaints of the rich and indolent; from the latter, many of the diseases of the poor and laborious. As the

A person, fatigued with his usual exercise, is immediately composed to sleep; which, equally, flies from him who has had either less, or more, than that middle degree (*e*).

CCXLI.

action of the exciting powers should be adapted to the strength, a little indulgence in sleep is the safest extreme to the weak, as in the case of children, and persons labouring under debility.

(*e*) When a boy, I valued myself much for enduring the fatigue of walking: About the fifteenth year of my age I walked, in a summer day, from Berwick on Tweed to Morpeth, which, with two miles wandering out of the high road, I found to be a journey of fifty miles. But I got not a wink of sleep the whole night, from the excess of the exertion; and the next day, so pained and enfeebled were all my joints, that it was with the utmost difficulty I made out the single stage from Morpeth to Newcastle, which was only a walk of fourteen miles. Some years after that, when I was now arrived at my full strength, and my joints perfectly knit, I walked and wandered in all sorts of ground, in roads and out of them, over smooth and plain, and heathy and mountainous tracts, from four o'clock P. M. to two a clock, P. M. next day, with only an hour's rest, and one hearty meal at betwixt ten and eleven o'clock in the forenoon, when I was now within six miles of my destination. The hills over which I wandered in the course of the night are those called Lammer-muir, situated betwixt East Lothian and the Mers: the places I travelled between
in

CCXLI. As the effect of both indirect and direct debility is sometimes sleep, sometimes watching, both of them unhealthy, both hurtful: so the cause of morbid sleep is either sort of debility, when no stimulus acts upon the weakened system so as to throw it into a state of agitation: and debility of either kind, accompanied by such a stimulus, produces morbid watching; in which case some small stimulus acts as an irritating power (*f*).

N. Instances

in this rout were Edinburgh and Duns, the place of the nativity of the celebrated schoolman and metaphysician, John Duns Scotus, and that of my grammar education. In this great exertion I was sustained by a great stimulus, high animal spirits, and love. At the end of my journey, and finding myself among my friends, and with the object of my affection, I had vigour enough to dance with the latter. This time I slept well, and was perfectly recruited next day.

(*f*) Volumes have been filled with the doctrine of irritation as a cause of morbid state, and the indications of cure and remedies to remove it have been equally tedious and laboured. In sthenic diseases, phlogistic diathesis, instead of plethora and vigour (for the belief in which two last there might have been some foundation in that form of diseases, (see above from CXXXI. to CXXXIV.) has been the universal pathology; and bleeding, other evacuations, and cold, the universal idea, or, as it is called,

N. Instances of morbid sleep occur in the predispositions to diseases, and in the actual diseases, that depend upon sthenic diathesis, and in the ordinary state of intoxication from drinking. But all the exciting powers, when noxious from excessive stimulus, each in proportion to its degree of excess, have the same tendency (g). But, when the exciting power proceeds

indication of cure; and while they thought of no other method or means of cure for the asthenic form of diseases, the pathology, applied to them, was plethora with vigour or with mobility in other cases, and, in the febrile, irritation. By irritation they explained the startings of the tendons, the restlessness, the frequency of the pulse, typhomania or constant working, of so frequent occurrence and so noted a symptom in those diseases. But as we have proved, that the reverse of plethora and vigour is the true state of the system in every disease of debility; so we assert with the same solidity of argument, and the same weight of proof, that irritation, considered, either as the cause of morbid watchfulness or of any other symptom, is nothing that requires either evacuant, or any other debilitating remedies, to remove it. It is merely a weakened state of the system, thrown into flutterings from the slightest exertion of the ordinary functions, as when a person falls into tremors from noise, or into a sweat from walking a step or two.

(g) A heavy dinner, excessive fatigue from either corporeal

proceeds beyond the sleep-inviting point; or when any stimulus, still finding unwaisted excitability to act upon, continues to act; in that case the watching will be continued with bad effect, as in the harrowing watchfulness, which is liable to accompany the phlegmasiæ.

CCXLII. Instances of morbid sleep occur in all the diseases of indirect debility, and in pains that have advanced to the same degree of exhausted excitability in the scale (*b*); as
in

poreal or mental labour, a high fit of passion, and heat, are, each of them, noted for giving a disposition to sleep; which is an effect, arising from their high degree of stimulus, hurrying the excitement to that degree of waste in which the sleep-inviting points consists; and it will the more readily take place, that no exciting power, by still finding excitability to act upon, continues, therefore, to act, and prevent the sleep.

(*b*) This happens in the phlegmasiæ, where the effect, not only of the inflammatory pain, but of the whole diathesis, and of every other symptom, as well as that of pain, is to run up into indirect debility. The last part of debility, that ushers in a fit of the gout, is commonly of the direct kind; but the effect of the continuance of the pain is often sleep, the origin of which is indirect debility, its consequence an increase of the disease, and

in the several cases of phlegmasia, that arise from the violent progress of the morbid state, or the improper administration of stimulants for the cure; which is particularly exemplified in the dropsy of the breast, that often arises from peripneumony under such management. With respect to sleep from direct debility, women, who have had many children, who have often suckled, as well as all lazy persons, and those, of both sexes, who are addicted to luxury, and whose custom it is to sleep too much, are all liable to this sort of morbid sleep.

CCXLIII. When either direct or indirect debility produces sleep without refreshment (*i*), or a turbulent waking state, as the debility exceeds that in which sound sleep consists; the use in both these cases of a stimu-

its remedy an interruption of the morbid sleep for the purpose of administering such diffusible, and other, stimuli, as have the effect of removing the debility which occasions both the sleep, and other symptoms of the disease.

(*i*) Which often happens in fevers and many other cases of debility, besides those mentioned in the text (CCXLII.), and ought never to be encouraged, but repelled by every means of exciting the patient.

lus capable of repelling the former, and converting the latter into sleep, will remove the complaints, and serve for an illustration of the nature of both (*k*). In asthenic diseases

(*k*) Let the point of indirect debility, in which sleep consists, be as 15 degrees in a particular scale, and the greater debility, than that which either constitutes morbid sleep or morbid watching, be 20 degrees or upwards in the case of its being indirect, or 10 or downward in the case of its being direct debility. It is evident, that, to bring on salutary watching on the one hand, or salutary sleep on the other, or to convert both into salutary sleep, if that be required by the circumstances, the deficient degree of stimulus must be administered; that is five degrees to bring up the excitement from 10 to 15 degrees, and as many for the purpose of renewing the worn out excitement by means of a new exciting power which may still find a portion of excitability to act upon, or to remove certain stimuli, which, however slight and mild, are fatiguing and disturbing to the system in its weakened state. Accordingly in fever, when the patient, amidst every sort of directly debilitating powers, had, besides, wanted sleep for ten days, a small portion of an opiate given him every quarter of an hour, in 3 hours time laid him asleep, which, in spite of an urgent cough and profuse expectoration, lasted for 16 hours, and was followed by the most surprising relief. The continuance of this practice, with only an increase of the doses in proportion as the abundant excitability was gradually

eases the watching state for the most part is the consequence of direct debility, with some power

worn off, and alternating them with wine and beef soup, in ten days removed all danger. A child of three months had had no sound sleep for ten days, but had cried night and day from a complaint in his belly, which the ordinary practitioners would have called an obstruction in the mesenteric glands. A large dose of the tinctura thebaica, for the patients age, was administered, which laid him in a profound sleep, that continued near 36 hours, and at once removed the disease. Numberless are the cases of a kind similar to this, where the morbid watchfulness was partly from direct, partly from indirect debility, that have been constantly removed by the same practice. A child of 7 years of age, in a fever of great direct debility in consequence of a most rapid growth happening during the disease, which was not completely removed till near the end of seven weeks, after having been under the disease near a fortnight, was effected with the most constant disposition to sleep, so sound that no noise or shaking of his body could waken him. The administration of the opiate repeated in small doses till the effect took place, kept him awake. Some time after, in the course of the same lingering disease, when he had not yet acquired any permanent strength, but was only better supported by the diffusible and other stimuli, than he had been till I was called in, his predominant symptom came to be great watchfulness, which was partly the effect of a certain, though not a great degree

power acting by a slight stimulant effect; the reason that the disease depends upon more debility than that which constitutes sleep.—Hence every thing that stimulates, every thing that raises the excitement as it were to that point, which composes the system to sleep, produces that effect by a stimulant, not a sedative, virtue. In a small degree of debility, where the excitement has fallen only a little below the point of sleep, a very small degree of stimulus is sufficient: such as a little animal food where

degree of excitement that the tincture and other cordial powers had given him. It, however, induced too great a degree of indirectly debilitating exertion for his still very weak state, and it, therefore became necessary to give him an addition of excitement to bring him to the state of salutary and recruiting sleep, and thereby to suspend the action of a number of existing powers, however slight their operation was, which were too much for the enfeebled state of his system. In the cases of children, whose diseases are almost all asthenic, and in other diseases of high debility, the instances of such effects of the diffusible stimuli, (for more than one was employed upon this as well as many other occasions) are equally numerous and surprising. In a very large practice I am sure I never, in the very worst cases, lost three patients.

the

the weakness is owing to vegetable food; wine, or any liquor of equal power, after a water regimen; consolation under affliction of mind; heat, when cold has been the debilitating power; gentle exercise or gestation, or the stimulus of a pleasant train of thought, when the patient has been deprived of the stimulus of corporeal or mental exercise. In a higher degree of debility (for the curative power should always be adapted to the degree of the disease) either a proportionally higher degree of the stimuli which have been mentioned, or some more powerful one, such as those, which are called diffusible, should be employed.

CCXLIV. In both these cases, the virtue of opium is great; its virtue, however, is not peculiar, or any other than what it possesses in common with all the other stimulant powers, from which it differs only in the higher degree of its (1) virtue. Thus in great debility
as

(1) The notion of some powerful remedies, as opium, mercury, the Jesuits' bark, &c. acting by an operation peculiar to each, and different from every other power in nature, was long prevalent in the schools of medicine.

Those

as in fevers, or a violent fit of the gout, where there is much internal commotion, and in other similar diseases of debility, in which the violence of the disease keeps off sleep; opium, after the watchful state has remained many days, will often bring on profound and sound sleep: Here, as the excitability is much accumulated, and as very weak stimulants only are admissible, we should begin with the weakest

Those they called *specifics*; an idea, which, like many other of their vague conceptions, was altogether contrary to sound philosophy; since the more careful our inquiries into nature's operations are, the more and more reason have we to be convinced, that simplicity and uniformity pervade the whole phenomena of the universe. Accordingly, in the exciting powers that act upon the excitability of our bodies, we find only one action, that of stimulating, varying only in its degree, to take place in all animal as well as vegetable bodies, nay in every thing that we know to possess life in the universe. We also find, to the same extent, only one property in living systems upon which it acts, that is, the excitability; and one effect produced by the mutual relation betwixt them in that respect, to wit, the excitement. Instead of the distracted notion of vortices, or atmospheres in rapid motion, governing the motion of the planets, sir Isaac Newton found the whole planetary systems of the universe governed in their motions by one single principle.

weakest and gradually increase them, till we arrive at the point of sleep, which will soon happen, as it is placed much within the range of direct debility. With respect to coma, or that sleep which is not refreshing; such is the effect both of other diffusible stimuli and of opium, that it converts morbid sleep into vigilance; vigilance, after a certain space of time, into refreshing sleep, and thus restores the patient safely, gently, and pleasantly, to health. But as the influence of the stimulant operation, that supports excitement, is of such great importance, and as sleep of longer duration than proves refreshing, may arise even from proper remedies, the rule to be observed is, whenever sleep, upon account of too long a suspension of stimulant action, has been of less

ciple. Instead of the infinite difference of habits and temperaments, I have found every individual precisely the same as every other. Whatever produces the gout in one, will produce it in another, prepared to receive its influence. And whatever cures it in any one, cures it also in every other; and so forth with respect to every other disease. The deeper we explore the works of nature, the more shall we be convinced of this wonderful simplicity, so that, to a philosopher, all nature would appear the effect of one single instrument in the hand of the all-wise all-powerful creator.

service

service than was expected, to shorten its next period, and renew the operation of stimulants.

CCXLV. In asthenic diseases, from indirect debility, in which sleep is also kept off; in order both to restore it, and remove the other symptoms, and bring about the healthy state, other stimuli should be employed according to the degree of debility, and, when the degree of debility is very considerable, the diffusible stimuli, and among the rest opium.

CCXLVI. These are the times and circumstances in which opium produces sleep. In all the other states either of health or disease, it excites the functions both of body and mind, as well as of passion and emotion; so as to banish sleep, and produce great activity and vigilance. Thus if any one is sleepy without an evident cause, he will by opium be rendered surprisingly sprightly, lively, and vigilant; it banishes melancholy, begets confidence, converts fear into boldness, makes the silent eloquent, and dastards brave. Nobody, in desperate circumstances, and sinking under a disrelish for life, ever laid violent hands on himself after taking a dose of opium,
or

or ever will. In one word, through all the intermediate degrees of excitement from direct to indirect debility, opium is by far the most powerful of all the agents, and as such must be the most hurtful in sthenic diathesis, because, when added to the other stimulant powers, it not only banishes sleep, but may suddenly induce indirect debility, and even death by exhausting excitability.

CCXLVII. That the debility, upon which coma depends, is less than that which supports morbid vigilance, appears from the former being less dangerous, and more easily removed; yet, when its duration is in any degree considerable, or when it resembles profound sleep, care should be taken to prevent direct debility; in which case recourse should be had to the different forms of wine and opium, in order to raise the excitement to that degree, which repels the sleepy state, produces more strength, and facilitates the return of health (*m*).

CCLVIII.

(*m*) Physicians have had a more favourable idea of coma, or the sleeping state in fevers, than it merited. Instead of deserving to be looked upon as a positively good

CCLVIII. In the gout, in indigestion, of which examples have already been adduced, in diarrhœa and the colic, and many other asthenic diseases, particularly those that disturb the alimentary canal, and chiefly affect women exhausted with frequent child bearing, and long and repeated nursing; it often happens, that there is a strong propensity to sleep, contrary to what happens to the same persons in health, and the period of sleep is prolonged, without any alleviation of the disease. The same thing happens to those who have fallen into indirect debility from drunkenness or any other cause. That this propensity to sleep depends either upon direct or indirect debility is evident, for whatever produces further debility increases the disease, and every thing

good sign, insuring a safe return of the disease, as it was by them, it was at best but a negative mark, implying that the slight stimuli acting upon the system in a state of high debility, and, therefore, by their operation, slight as it was, increasing the direct debility by the addition of the indirect to it, were kept off and hindered from producing that hurtful effect. Their authority in giving that judgment of it is overthrown by their extreme ignorance of its nature.

that

that strengthens, removes it. Strong liquors, and the preparations of opium, are peculiarly effectual, and that in proportion to their greater and more diffusible stimulant power.

CCXLIX. Thus sleep and wakefulness may be either induced or obviated by certain degrees of stimulation. The removal of morbid affection without inordinate motion by a stimulant power equal to that which is required to cure spasms and convulsions or to reduce the quick pulse in fevers, is an analogous circumstance. Upon the whole, it is plain, not only that irregular motions are not increased functions, depending upon increased excitement, but that they are impaired functions, and depend nearly on an equal degree of debility.

CCL. From what has been said, the analogy between wakefulness and life, sleep and death, and their dependence upon the same laws that govern all the other functions, clearly appears; and solid proof has been adduced, that the most vigorous wakefulness consists in the highest degree of healthy excitement; that good profound sleep depends on the highest debility that is consistent with
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the healthy state; that true sleep depends on a mean degree of indirect debility, and that both morbid sleep and morbid watching are the offspring of great debility, whether of the indirect or direct kind.

C H A P. VIII.

The cure of both the diatheses—Indication either to diminish or increase excitement—Powers that cure, differ only in the degree of their action from those that induce, either diathesis—In the sthenic, when strong, heat to be avoided—When and how admissible—Cold the great remedy in this diathesis—Never injurious from astringency—Heat useful in asthenia—Cold baneful—Produces putrefaction of the fluids—Diet in sthenic—and asthenic diathesis—Bleeding, purging, vomiting to diminish fulness of vessels—How to treat inanition—Of bodily and mental exertion—Of the passions—Of air—Of contagious diseases—Single less effectual than united powers.

CCLI. THE causes of both the diatheses have been formerly (CXLVIII.) assigned: whence it appears that the indication of cure, in the sthenic diathesis, is to diminish excessive excitement over the whole system; in the
asthenic

asthenic, to increase deficient excitement likewise over all the system, till it be brought to the healthy degree.

CCLII. The remedies that effect the cure of sthenic diathesis, are the powers, which, when their stimulant operation is excessive, produce that very diathesis; but which, in effecting a cure, act with such diminished force, as to produce less excitement than health requires, or to prove debilitating.

CCLIII. The powers which produce the same effect in the asthenic diathesis, are those that, when their stimulus is too weak, produce that diathesis. In effecting a cure, they must be applied so as to produce higher excitement than is consistent with the state of health, or so as to stimulate.

CCLIV. In the sthenic diathesis that temperature (*a*) which is called heat, must by all

(*a*) The same order is followed here, that has all along been observed; to wit, that of the enumeration of the powers in par. XI. and XII. and that of the explanation of them, when viewed as the hurtful powers producing either diathesis in Chap. I. Part II. and it will be kept to throughout the whole work. Nothing can be more simple and natural, and better suit the simplicity of the

all means be avoided; because that degree alone of what we from our feelings name *heat*, which proves debilitating, viz. an exceedingly high temperature, cannot be applied without the risk of pernicious consequences from the previous excess of stimulus (*b*).

CCLV. But, when the diathesis, and its cause the increased excitement, are moderate,

subject, while nothing is more artificial and arbitrary than the arrangements either of systematics or nosologists. Just order could never be expected from an erroneous and confused view of the subject to be treated of; while a clear conception of the subject as a whole, infallibly leads to a distinct distribution of the several parts that compose it; so that, what Horace says of language, equally applies to order, and the same thing applies here as to his *Verba & lucidus ordo. Verbaque provisam rem non invita sequentur.*

(*b*) See above, par. CXV. Though very intense heat relaxes the fibre and induces atony on the living solids, who, in a peripneumony, would think of using it with that view? That disease, from its own violence, often mounts up so high in the scale of increased stimulus, as nearly to approach the point of indirect debility, and it sometimes actually gains that point. The addition, therefore, of more stimulus from the application of heat, would insure that effect, and thereby occasion the conversion of the disease into a much worse one, such as hydrothorax, or the dropsy of the breast.

though

though the disease is fully formed, there is no occasion for forbidding that degree of heat, which accompanies the operation of sweating and the pediluvium; because the waste of fluids in the former, and the agreeable sensation in the latter, promise somewhat more advantage than such a moderate degree of heat threatens disadvantage.

CCLVI. After the application of intense cold, the application of heat must be studiously avoided, because its operation, from the increase of the excitability by cold, becomes more effective. And the consequence is the more to be dreaded, because, at the same time, other stimuli are usually applied.

CCLVII. Cold is the beneficial temperature in the cure of the sthenic diathesis, but it must not be followed by any considerable degree of heat. The mistake, therefore, in medical practice, of thinking cold hurtful in sthenic diathesis by a stimulant operation, should be corrected: its use in the small-pox is not to be understood to arise so much from its mere debilitating degree, as from avoiding the stimulus of heat after its operation. When the same precaution is employed, cold

either alone, or in conjunction with other debilitating powers, has lately been found the most effectual remedy for catarrh, or for a *cold*, as it is vulgarly called.

CCLVIII. From which circumstance, and because a cap of fresh earth put upon the head, has been of service in phrenitis; and because that degree of cold, which attends frost and snow, when applied to the naked body, has removed a synocha accompanied with delirium (*c*); and because cold is so efficacious

(*c*) It is called the common inflammatory fever, very improperly, as being no fever, but a general pyrexia, or affection of the whole system, without inflammation or local affection, and producing heat over all and tumultuous effect upon the pulse. Its proper generic name is pyrexia. See above, par. LXVIII. where that appellation is assigned to it; an appellation to avoid mistaking its nature, that should be accurately attended to. Great mischief has been occasioned by this vague term. Thus when a person is said to be affected with a disease; when it is asked what disease it is, and the answer given, that it is a fever, immediately bleeding is thought of, though that, and every, evacuation is as hurtful in proper fever as it may be serviceable in the pyrexia. To give an example of this pyrexia, the particular appellation for which is synocha, or sthenic pyrexial disease; many years ago, a person in the old town of Edinburgh, labouring

ficacious a remedy in the small-pox; it clearly follows, that the use of cold should be extended to the whole range of predisposition

bouring under it, escaped the vigilance of his nurse; flew naked out of the house in a very keen frost with snow upon the ground, across the streets, passed over into the new town, and from that to the fields beyond it. He soon became sensible of his state, stole into a house next to him, got some clothes thrown about him, and was carried home in a chair, perfectly cured of his disease. From which, and a prodigious number of facts to the same purpose, all concurring in the proof of the debilitating operation of cold, there can hardly arise a doubt in the mind, that in a certain high degree, if it could be conveniently used, or if there were occasion to have recourse to it for want of efficacious remedies, it would at once remove the highest degree of sthenic state that ever occurs in disease, and reduce the excitement from the nearest approach to 70 down to 40. Nay it might run into the opposite extreme and go all the way to death. But we shall, by and by, have occasion to observe, that we are so well provided with effectual remedies as not to be under any temptation of straining this to its height. And we shall also find that a number of remedies in a moderate degree are preferable to any one, or to a smaller number in a higher degree. The discovery of the principle upon which the cure of sthenic diseases turns, has enabled us to render the cure both more complete and exact, than it could have been without principle.

and the whole circle of diseases, depending upon sthenic diathesis.

CCLIX. That no hurtful effect arises from the supposed astringent power of cold in the sthenic diathesis (*d*), appears from its remarkable effect, when applied to the surface of the body in the small-pox, in keeping up freedom of perspiration in proportion to the degree of its application. Its effect in producing atony with proportional laxity of the fibres of the vessels, depends upon the same principle (*e*).

CCLX. For the removal of asthenic diathesis the stimulus of heat is signally useful, and chiefly for the following reason; that it must be as useful in this diathesis, where the excitement is too low, as it is hurtful in the sthenic, by increasing the excitement, al-

(*d*) I remember, when I was a young student, of hearing the old physicians in Edinburgh very gravely forbid a draught of cold water in an inflammatory pyrexia, and even in a common catarrh, for fear it should produce an inflammation in the stomach.

(*e*) The fibres being relaxed describe a greater cavity, and hence the check given to the perspiration by the contrary effect of the sthenic diathesis in increasing their density and diminishing their diameters, is taken off.

ready

ready too high. Hence in fevers, in the gout, in dyspepsia, in the colic, in rheumatalgia, and in all asthenic diseases, the system is very much invigorated by heat, and debilitated by cold: which, by its debilitating effect, is ranked among the powers that produce these diseases (*f*); and in fevers is fatal.

CCLXI. As cold is hurtful in asthenic diathesis in the proportion in which it is serviceable in the sthenic; it is accordingly, for a further reason, to be avoided in diseases of the highest debility, for, like intense heat, it relaxes the extreme vessels, and produces a putrefaction in the fluids. (See CXVII.).

CCLXII. The more certainly to moderate the sthenic diathesis while it remains as yet within the limits of predisposition, a sparing use should be made of flesh and the prepara-

(*f*) No gouty person can bear the operation of much cold, and every one can endure more heat, than most other persons. And the reason is evident: So debilitating a power must, in proportion to its degree, be peculiarly hurtful in all diseases, in which the debility constituting their cause, runs high, as it naturally does in the gout, where it is increased by the advance of age and other causes, and much more so in fevers.

tions

tions from it, and vegetable diet be used with greater freedom. But, when this diathesis is increased to the degree, that constitutes disease, abstinence from animal food, especially in a solid form, and a free, but still not excessive, use of vegetable matter, especially in a fluid form, are the best means of removing it, as far as the effect of diet reaches.

CCLXIII. In the degree of this diathesis, which does not exceed predisposition, it is proper to avoid *seasonings*, which are destructive in sthenic diseases fully formed.

CCLXIV Weak liquids are very useful; and all spirits and strong liquors hurtful in proportion to the quantity of alkahol they contain. Such liquors, unless extremely diluted, are fatal in fully formed sthenic diseases. In these diseases pure water, especially with the addition of something to acidulate it, is preferable to small-beer, which a great authority admitted. But the diffusible stimuli in this diathesis are above all others hurtful.

CCLXV. Since the indirect stimulus of food assists the direct, that is, propagates itself over the whole body, bounds should be set to the quantity even of suitable food.

CCLXVI.

CCLXVI. In every degree of asthenic diathesis, vegetable food should be avoided, and recourse be had as soon as possible to animal matter. But as this can seldom be executed immediately upon account of the weakness of the stomach; the diffusible stimuli should be used; such as the different forms of wine when the debility is moderate, and opiates when it is greater. At the same time, from the very first, rich soups should be given in great quantity upon the whole, though not too much at once, and a gradual transition made to the use of more solid matter.

CCLXVII. As animal matter in this case is of service, so the degree of stimulus, that seasoning adds to it, improves its effect.

CCLXVIII. During the predisposition to asthenic diseases, watery, cold, acid, fermenting liquors are hurtful, and that proportion of strong liquor, that the degree of debility requires, is beneficial. But, after the diseases have actually taken place, and have attained a great degree of vehemence, strong liquors become so indispensably necessary, that excepting soups, and the still more diffusible

fufible stimuli, they are the only fupport required for a long time. There is no occafion to fear the indirect ftimulus of food, when the matter, which chiefly affords this indirect ftimulus, viz. vegetable matter, is guarded againft. Compare this with paragraph CCLXV.

CCLXIX. For the purpofe of diminifhing the ftimulus, which an over proportion of chyle and blood (*g*), directly applied to a great extent of the body, gives; the over proportion, when it is very great, fhould be removed by abftinence, bleeding, and purging; when it is more moderate, but yet adequate to the effect of producing difeafes, the directions lately given (CCLV.), refpecting a moderate

(*g*) The chyle is the alimentary matter, that has undergone a preparation in the ftomach, and an after-one in the upper part of the inteftinal canal, and which, fo prepared, or in part digefted, is taken up by the mouths of a number of fmall veffels that open into the inteftines; thefe carry it to a great trunk, in which all thefe veffels, called lacteal, unite, and through that trunk it is afterwards mixed, firft with the venous, and then with all the other blood in fucceffion. Such is the nourifhing matter of animals.

diathefis,

diathesis, ought to be observed; that is, we should adhere to the practice of vomiting, and purging from time to time, and to sparingness in diet. But blood should not be let. And, if upon any occasion, the patient shall give way to a little freedom in his use of food, it should consist of vegetables; and he should afterwards observe abstinence, and take gentle and frequent exercise, so as to keep up a full perspiration.

CCLXX. The means of cure for an excess in the velocity of the blood (paragraph CXXXI. to CXXXIV.), in so far as it depends upon an over proportion, are the same: when the velocity depends upon violent motion of the body, the means of lessening it, as long as the diathesis is confined to predisposition, or to a slight degree of actual disease, are an abatement of exercise, more indulgence in rest, and a reduction of other stimuli. In that high diathesis, which occasions severe diseases, in order to retard the motion of the blood, the stimulus of all the exciting powers must be studiously avoided, and blood must be drawn profusely. Here

it is superfluous to lay down any rule for the observance of rest, as rest, even in spite of the patients, is unavoidable (*b*).

CCLXXI. Withdrawing the powers that occasion an over-proportion of the secreted fluids in the excretory ducts, is the best method of removing the stimulus, which that over-proportion, by its distending effect, produces (*i*). The cure, therefore, consists in more frequent coition, drawing off the milk, taking in food of a less nourishing nature, and in restoring the perspiration by removing the sthenic diathesis upon the external surface.

CCLXXII. To remove the debility, or atony and laxity, of the vessels, which is occasioned by a penury of chyle and blood over

(*b*) It would be ridiculous to require of a patient in the rage of peripneumony not to run a race, when his real state is, that he cannot move or turn himself in the bed without pain.

(*i*) In par. CXXXVI. you will find, that the secreted fluids, here alluded to, are the milk, the semen, and the perspirable fluid. As the distention occasioned by the over-abundance produces the morbid stimulus, so the subduction of the fluids must, of course, take it off, and give the desired relief.

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a very great extent of the system (*k*), first, the strength must be gradually restored by diffusible stimuli (*l*) and soups; next, we should gradually

(*k*) How great the space or extent of the system is, that, in the sthenic diathesis, receives the stimulus of an over-abundance of blood; and which, in the asthenic diathesis, is subjected to the debilitating power of an under-proportion of the same fluid; may easily be conceived from the well known fact, that there is not a soft part in the whole system, into which the insertion of the point of the finest needle will not draw blood; consequently, the stimulus arising from an over-abundance of blood, as well as the debility arising from too small a quantity, must be the most considerable of all others. Every circumstance here concurs to render the one the greatest sthenic, and the other an equal asthenic, noxious power. If the force of every stimulus, of every exciting power, be in proportion, first, to the degree of it applied; secondly, to the sensibility of the part on which it acts; and, thirdly, to the extent of that part; it will be no wonder, that these two powers should prove the most formidable of all others. Hence it is, that, in the curative part, bleeding is the most powerful remedy of sthenic, and filling the vessels an equal one, of asthenic diathesis.

(*l*) Which act by giving vigour to the whole system, and more especially to the stomach, with which they come into actual contact. Hence digestion, and the conversion of the matter taken in into good chyle and blood; and hence, at last, the fulness of the vessels first indicated.

gradually substitute solid food for soups ; and lastly, to give the whole system still more strength, it should be fortified by exercise, and the rest of the durable stimuli ; but the use of diffusible stimuli should not be extended beyond the period of considerable debility (*m*).

CCLXXIII.

cated. The process of emptying the vessels in the cure of sthenic diathesis has the advantage of being the first in order ; and hence it is that the cure of sthenic diseases is more quickly effected than that of the asthenic, it being, over all nature, much more easy to take away than replace. See and compare paragraph CXXVI, and CXXX. and subjoined notes, and a little above, par. CCLXVI.

(*m*) The sole use, and a great one, of the diffusible stimuli is, in great weakness, where they are only required, to support the system, while it cannot be supported by the ordinary durable stimuli ; and, after the excitement is so far restored, that the ordinary supports are now sufficient, to lay aside the extraordinary, the continuance of which would now be hurtful, and to manage the convalescent, and restored, state of health by the powers employed in health. When the diffusible are continued longer, they are equally hurtful, and a cause of disease, as they are serviceable when disease requires their support ; analogous to wine, they bring about the system in a weakened state to be sustained by its natural and ordinary supports ; but, analogous to it in another respect, when the strength of the
system

CCLXXIII. In a weak state both of the vessels and of the rest of the body, every considerable motion of the body, and all other stimuli, which quicken the motion of the blood, and bring on temporary indirect debility, should be avoided. But in flighter debility, such motion as does not prove fatiguing, but acts as an agreeable stimulus, and refreshes, should be enjoined. During convalescence, the patient should be gradually brought back to his usual plan of life; nor

system requires not their additional stimulus, they carry it up into indirect debility, and prove the cause of diseases and death. In one word, whatever has been said against the propriety of the use of excessive, and ultimately excessive stimulant powers, the former producing sthenic diathesis, and the latter indirect debility, all that applies, with propriety, for the discontinuance of the use of diffusible stimuli, when the durable are now sufficient for the purposes of the system. And another argument that still remains against the superfluous use of both the diffusibles and strong drink, when debility requires not their use, is, that, independent of death, or even diseases, being their immediate consequence, predisposition to diseases must; consequently, as the system must at last be worn by stimuli, all the unnecessary, that is, all that do not contribute to that middle vigour, in which sound health consists, should be avoided.

should it be forgotten, that, till this is done, health is not completely restored.

CCLXXIV. The debility, which an under-proportion of secreted fluids, or a degenerate, though plentiful state of them, produces in the excretory ducts, is removeable by the stimulant plan of cure (CCLXXII.), not by antiseptics.

CCLXXV. The remedy for that sort of stimulus, which arises from either intense or constant thinking, is either an abatement in the degree of thinking, or else such an exertion of the intellect, as by exhausting the excitability, shall prove indirectly debilitating. This last expedient, however, though it may be adapted to the state of predisposition, is by no means safe, after the disease has once made its appearance, and especially if it be violent; because no benefit can result from it, till a degree of excitement, that would probably prove injurious, has been raised by the stimulus.

CCLXXVI. In order to cure a slight sthenic diathesis, such as occurs in predisposition, and to prevent disease, habitual passion should be avoided; but the removal of actual

actual disease requires the first gust of passion to be prevented. Excess of passion, upon account of the intermediate danger of stimulating too much, is by no means to be thought of, as the means of inducing indirect debility.

CCLXXVII. Where debility depends upon excess of mental exertion, or upon a languid state of the intellect, the excess should be diminished, the languor removed, and an agreeable train of thinking promoted; without which latter, however much all the other stimulant powers may have been employed, it may be depended upon, that perfect health, in every respect, will not be restored (*n*).

CCLXXVIII.

(*n*) The state of the intellectual function has a great influence upon that of excitement; and, often, when all other stimuli have been applied in due proportion, the deficiency of that single stimulus will point out a want in the proper measure of excitement. There is not a finer stimulus than the pleasurable feeling arising from a happy train or flow of thinking; hence the high delight that arises from a flight of wit, or from a pleasant vein of humour; hence all the fine feelings of the belles lettres; hence, in youth, the ardent keenness to be acquainted with the learning, wisdom, and elegant pro-

CCLXXVIII. In every degree of debility, such force of passion, as produces indirect debility,

ductions of the ancients, as well as of those, who have made a distinguished figure in later times; hence the enthusiasm, so natural to the human feelings, to out-strip others in every mental excellency: The arts, the sciences, every department of human knowledge, are all the effects of that intellectual propensity. How happy would it be for mankind were this noble stimulus duly cherished! What benefits, which society is deprived of, would not accrue from a proper cultivation of it! How fine was that feeling in Julius Cæsar Scalliger, when he declared he would rather be the author of Horace's few stanzas of Lydia and Telephus, than accept of the crown of Arragon! What must have been the delight of Pythagoras, when he found out the XLVIIth. proposition of the first book of the mathematical elements, commonly called Euclid's? He jumped about in an ecstasy, crying out *Euphuxa*, and was so much more substantial than some of his few brother discoverers, as to possess the means of offering a sacrifice of an hundred fat bullocks to the gods. See Observations on the Principles of the old Systems of Physic, from page ix. to xv. of the Introduction. How delightful must the feelings of Horace have been, in whose works every ode is an effort of the most beautiful, and, frequently, of the most sublime, conceptions of human genius! What must have been the fire and force of Milton's soul, in the description that he gives of the appearance

bility, must be avoided; nor must it be forgotten, that a very small degree of it is sufficient for this effect: we are not even to indulge agreeable passions too freely (*q*).

CCLXXIX.

pearance of the Son of God in his celestial panoply, "his countenance too severe to be beheld!" How towering that soul, how exalted that intellect, which the great marquis of Montrose displayed in a stratagem, which converted into a glorious victory a blunder in one of his officers, that might have proved fatal to both his cause and his glory. When it was whispered to him, standing in the centre of his army, that one of his wings was overpowered, he shouts out to the commander in the other: "My Lord Aboyn, shall you and I stand here doing nothing, and M'Donald carry off all the honour of the day!"

(*q*) See above, par. XLIII. and CXLI. Recollect the method prescribed in the XLIII. paragraph of this work for preventing the fatal catastrophe of the Roman woman, when her son, whom she had counted upon, for certain, in the number of the dead, was, contrary to every expectation, presented to her in perfect health. The danger and fatality of her state was, that her excitability was too accumulated, with respect to the stimulus of exciting passion, to bear such a strong impression as that which the presence of her son, in life and health, had made. She was in the state of a famished person, whose accumulated excitability is overpowered by a single morsel of food, or of a person, who had been
long

CCLXXIX. When there is a deficiency of passion, as in sadness, grief, fear, terror, and despair, which are only inferior degrees of gladness, confidence, and hope, and imply only a diminution of exciting passions; the deficiency must be supplied, and the exciting degree of passion recalled; hope and assurance must be infused, and the patient gradually carried up to the feelings of joy.

II. For there is a sum total of passion, which acts in the same manner as other stimuli, that is, by stimulating either in excess, or in due, or in deficient, proportion; nay, like the rest, as often as any one is deficient, by accumulating the excitability, it makes the other stimuli act more powerfully (XXXVII. and the note). Take, for instances, the terror of an army before the trumpet sounds for battle, and the courage with which they

long affected with thirst, where the smallest indulgence in drink may prove fatal; or of a person, nearly starved to death by cold, in whom a rash approach to heat might induce the same fatal effect; all which are precisely upon the same footing, and equal instances of an excitability too accumulated to bear any degree of stimulus.

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are afterwards inspired, by the consciousness of their own bravery, the general's speech to animate them, or, perhaps, his commemoration of their former brave deeds.

P. Excessive voluptuousness in the exercise of the senses, as well as disagreeable objects, should equally be avoided in asthenic diathesis; in sthenic diathesis, they should be guarded against on account of the agitation they produce.

Σ. Nothing is better accommodated to the asthenic state, than a pure air; which, either alone, or joined with exercise, must, consequently, be of the greatest benefit to convalescents.

T. Since the matter of contagion, in so far as it has any tendency to produce general disease, produces either sthenic (*σ*), or asthenic, diathesis (*ρ*), and acts by an operation similar to that of the general noxious powers, general remedies should be employed in the cure; and debilitating ones opposed to sthenic, stimulant ones to asthenic, diathesis.

(*σ*) As in the small-pox and measles.

(*ρ*) As the contagious typhus, the gangrenous sore throat, dysentery, and the plague.

CCLXXX. These powers, the same in kind with those that produce the diatheses, but differing in degree and in that respect diametrically opposite, remove the diatheses seldom, and less successfully, when single; oftener, and more effectually, when several co-operate, but, best of all, when taken together, especially if there is occasion for a great curative effect.

END OF VOL. I.



PROSPECTUS OF A NEW WORK

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BY

JAMES ANDERSON, LL.D.

FRS. & FSA. E.

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Knowledge is power.

BACON.

THE work which is now, with due deference, offered to the public, is intended to furnish a rational amusement to active and energetic minds, during the hours of relaxation.

In the dawn of life, before the mind has experienced the domineering sway of unruly passions, and when its whole powers are directed to the acquisition of knowledge, time seems to be wanting for allowing the full measure of enjoyment: sleep only beguiles it for a while from its darling amusement; and no sooner are the eyes opened, than it rushes again, with the most eager avidity, into its delightful employment. The acquisition of knowledge then, is the enviable charm which constitutes the pleasure of youth; and in proportion as the attention comes to be diverted from this its original bias by following other pursuits, the charm loses its power; our happiness is diminished; and, without knowing the cause, we sigh in vain for a return of the joys that are past.

When man becomes capable of acting for himself, besides the preservation of the

individual, the protecting and maintaining of those who depend upon him, must always be very interesting considerations to him; business or labour must therefore, at this period of life, necessarily occupy a principal share of his time: But business and labour are too fatiguing to admit of occupying the whole of the time of any man: The mind calls for some relaxation or amusement; and blessed are those who think of reverting to the original amusement of their childish days, the pursuit of knowledge. How different is their lot from that of those who, unfortunately mistaking the road at their first outset in life, are driven to the unsatisfactory resources of gaming, drinking, debauchery, and excess, to get rid of that tiresomeness, which, to the vacant mind, renders leisure the most dreaded of all evils! While misery and lassitude are the lot of these, those men who, without neglecting business or the social duties, still continue to cherish that first and most pleasing propensity, a love of knowledge; and who, without overstraining, go steadily forward, are

amused by a never-ending succession of interesting objects, which keep the mind alive, and in a state of perpetual activity. None but those who have felt it can form an idea of the diversity which this kind of amusement admits, nor of the extent of the gratification it is fitted to afford. As knowledge thus gradually steals upon the mind, its perceptive and discriminative faculties are called into action: it then begins to see and to observe, to feel and to be moved, to know what is existence, what is life. No vacant hour to such a man can ever become tiresome; the mind is equally active when alone as in the midst of company: he

"Finds tongues in trees, books in the running brooks,
"Sermons in stones, and good in every thing."

But if the horrors of solitude can be thus annihilated, the pleasures of society can yet in a more eminent degree be augmented by the acquisition of knowledge. To please others is the most certain way of deriving pleasure to ones self; and nothing is so likely to give universal satisfaction, as the power of giving generally correct information respecting such objects as attract the attention at the time: for man is a social being, and without the animating glow of sympathetic affections the spirit languishes. Pleasure, if not participated, loses its greatest charm; and it is from a reciprocation of ideas of a similar sort, which vivify the soul, and illuminate the understanding in social converse, that it derives its most sublime enjoyment. Thus does the acquisition of knowledge confer upon man a species of existence he could not have otherwise experienced;—a species of existence in which he never can find himself out of his place: and though the rose cannot be divested entirely of its thorn, yet he thus learns to taste its sweets without being wounded by its prickles.

Such was the general train of thought that gave rise to the idea of the present undertaking; and it is hoped that an attempt to extend, in a small degree, the sphere of human enjoyments, will be received with indulgence.

Nothing has perhaps contributed so much to discourage the attainment of knowledge, as the propensity which literary men too generally affect, of trying to disjoin the pursuits of literature from those of business and the ordinary occupations

of life; in consequence of which these two classes of men have been taught to view each other with a kind of contemptuous disdain, which produces an estrangement that is highly injurious to both. It is very obvious that nothing can tend so much to give to the man of business that high degree of respectability which will enable him to discharge with honour to himself the duties belonging to those dignified offices to which he may naturally aspire, as a competent degree of literary knowledge; nor can any thing so effectually counteract those chimerical eccentricities to which the mere literary character is naturally prone, as that kind of cautious circumspection which habits of business so necessarily engender. It is only when an extensive knowledge of things as they really exist in this universe, is possessed by a man who is well acquainted with the common concerns of life, that that kind of solidity of judgment is acquired which has been dignified with the name of wisdom. The following work will therefore be an attempt to bring together those two species of acquirements which have been so industriously, and, as the editor thinks, so injudiciously separated.

To effect these purposes, no mode of publication was deemed so proper as that of a periodical work. In this way information, by being divided into small portions, will be gradually imbibed, without interfering with the more weighty concerns of life. A succession of new objects being thus brought under view at short intervals of time, will serve to keep the attention continually awake, without occasioning fatigue; while sufficient time will be given to have each subject deliberately examined, and thoroughly understood, before it be driven away by another. Though the advance, after this manner, when prospectively viewed, may appear to be slow, and, on account of the great ease that will be experienced during the progress, it may seem to be inconsiderable; yet the attainments, when retrospectively viewed, will be found to be much greater than could have been conceived; and we shall soon find ourselves placed imperceptibly in a far more elevated situation than we once deemed could have ever been attainable without the most violent and painful exertions.

To render this progress still the more pleasing, the magisterial air of authority

will be here as much as possible laid aside. Deep and abstruse disquisitions, which are better calculated to display the acquirements of the preceptor than to inform the pupil, will be avoided. The preceptor, becoming the companion, will advance with the pupil, hand in hand, in search of facts, which will be placed in such a light as shall tend to point out relations and connections that might otherwise have escaped notice, from whence will result conclusions which were by no means obvious at the beginning of the enquiry. In this manner will be formed by degrees, habits of attention and diffidence, which will call forth the discriminative powers, on the due exercise of which all correct reasoning and true knowledge must ultimately depend. The mind will thus acquire the faculty of judging without embarrassment on every occasion, and of distinguishing those cases in which its assent or dissent ought to be given without reserve, from those where that decision should be suspended until farther elucidations shall bring forward the facts that are wanting to give it the certainty required. Thus will the pupil, instead of requiring to be conducted through life in leading strings, and becoming the mere echo of the preceptor, be able to stand without support; and feeling his strength encrease by the regular exercise of his discriminative faculties, he will soon become his own best instructor, and the occasional corrector, as well of his own preceptor as of others.

" Fostered thus

" The cradled hero gains from female care

" His future vigour : but that vigour felt,

" He springs indignant from his nurse's arms ;

" He nods the plumed crest, he shakes the spear,

" And is that awful thing which heaven ordain'd

" The scourge of tyrants, and his country's pride."

The objects to which the attention of the reader will be chiefly directed, are indicated in the title page. A few words under each head will serve to give a general idea of what is intended.

AGRICULTURE.

From what has been already said, it will not be expected that an attempt should here be made to give any thing like a *complete* body of practical agriculture, far less a finished theory of that art. Were it even consistent with the plan of the work, the

state of our knowledge in this branch of science is by far too circumscribed to admit of it. As this, however, is confessedly the most useful of all arts; as bodily health and activity of mind are promoted in an eminent degree by the exertions that it requires; as it is better calculated than any other occupation for preserving that simplicity of manners, and purity of morals, which constitute the surest basis of a prosperous tranquillity in states; and as it has, on these accounts, deservedly obtained a very universal favour among men, who in general look forward with a wistful fondness to the time when they shall be enabled to indulge their partiality for this employment, in some favourite spot where they hope to end their days in tranquillity and peace, it appeared that this could not with propriety be omitted, in a work which professes to give some information on every subject that can prove a source of general interest or entertainment to man. As the editor is better acquainted with this subject than with most others, he will endeavour, in the course of the work, to state such facts respecting it, as he thinks are of principal importance to be known; and to suggest such ideas, as shall appear to him to be well calculated for guarding from error, and for inducing a rational progress in the principles and practice of this pleasing and useful art.

NATURAL-HISTORY.

No man can exist without knowing something of the properties and qualities of the objects that constitute this universe; and in proportion to the extent and the correctness of that knowledge, will his power be of rendering them subservient to his own advantage, and the welfare of society: but to what an infinite degree the power of man may be thus extended, those only can form an adequate idea who have made large advances in this science: and much it is to be regretted that the number of those who have made great advances in the useful departments of this science is still so small. Considered, then, in the view of utility only, natural-history would lay claim to a particular share of attention; but when the sublime entertainment it will afford is also taken into the account, it would have been altogether unpardonable to have overlooked it in this performance.

Among the infinite diversity of objects

which constitute this universe, there is not a single individual to be found which, when carefully examined, does not exhibit the most striking proofs of infinite wisdom and beneficence in the *Great first cause*, which formed and endowed them with the qualities they severally possess. But if, when considered separately, they be objects of admiration and wonder, when they all come to be viewed as constituent parts of one universal and harmonious whole; when their reciprocations upon each other, and the general effects that these produce are minutely investigated: when we are thus enabled to perceive in what manner contending powers and opposing influences, which upon a slight view seem to be calculated only for destruction, are, in truth, merely the instruments employed by infinite wisdom for producing the most salutary effects in this universe, the soul is lost in the expansive glow of adoration which overpowers it. In every step of its progress light flashes conviction on the enraptured mind, and it feels the joy of emerging from the gloom of doubt which oppressed it. That arrogance which so naturally swells the heart of man when he contemplates his own operations only, and which renders him alike contemptible and insufferable by men of sense, is moderated by the comparative insignificance of these his puny efforts; and his mind assumes that humble abasement which alone befits his situation in this world, and which is the only infallible source of unembittered enjoyment here below.

It is not, however, by a reiteration of vague and general declamation that the mind can be brought to feel the power of these sublime impressions: It is only from a plain and unornamented display of the peculiarities of individual objects that these conclusions will force themselves upon it, without any studious effort to bring them forward. On this plan it is proposed to give such a view of natural objects as shall seem to be best calculated to enable the reader to make general inductions from particular investigations, thus to lay open the book of nature to the intellectual eye, so as to make him be able to read it with intelligence and satisfaction, whenever he shall be so inclined. In the course of this survey, those objects will be chiefly selected for illustration, which can be rendered the most directly beneficial to man, or those which are eminently baneful to

him in any respect, that he may be thus taught to counteract as much as possible the effects of the one, and to avail himself of the other in the highest degree. That no ambiguity may remain respecting the identity of objects, they will be severally referred to by the Linnæan names: but farther than for the purpose of mere reference, the nomenclature will form no part of this work.

ARTS AND MISCELLANEOUS LITERATURE.

The two departments abovenamed, will be kept distinct from each other, and from the rest of the work; a certain proportion of each number being appropriated to each of these subjects, which will be separately pagged, so as to admit of being bound up, as one continued and undivided whole, when a volume is finished. The remaining sheets of each number will consist of detached essays on literature, science, and arts. Whatever can prove useful or interesting to man may find a place in this department. Men of talents may here find a convenient opportunity of ushering into the world with advantage, such speculations as they shall deem of importance; of proposing doubts, correcting errors, or supplying defects wherever they occur. The editor will strive to do all manner of justice to performances of merit which shall be offered to him, by carefully excluding all such essays, as according to his best judgment, would tend to diminish the respectability of his work. On this head he begs leave farther to observe, that as his great objects are to inform the understanding, and improve the heart, he will be studious to avoid every thing that can tend to irritate the passions, or to call forth any of the malevolent affections. For this reason PARTY politics, or those speculations which tend to exalt any one description of men in the state in preference to another, will on no account here find a place. Metaphysical disquisitions too, as tending to bewilder the understanding of plain men, and leading to no useful conclusion, he will studiously avoid. Still more carefully will he guard against that obscure kind of reasoning in physics which participates of the metaphysical cast; and which, by assuming data of an intricate nature that cannot be clearly established, leads only to perplexity and doubt. Religion also is a

subject of too much importance to admit of being properly treated in a miscellany of this sort: polemical wranglings, therefore, and every thing which tends to unsettle the mind respecting religious opinions, will be cautiously avoided: nor will national reflections, nor personalities respecting any individual be at all tolerated. With these few restrictions it is hoped judicious persons will cheerfully comply. The field will be still sufficiently wide to allow the fullest scope to the highest human powers.

If the editor, however, had had no other reliance but upon casual voluntary communications, he never could have thought of engaging in this undertaking. He relies upon the more steady co-operation of several persons of great eminence in the literary world, whose assistance he has engaged for that purpose, and whose names, were he at liberty to mention them, would give respectability to any work. Assured even of this aid, he has long balanced between the desire of performing what he thinks would be so praise-worthy, and the fear of failing in the attempt. Prevalled on at last by the entreaty of friends and his own wishes, he now proceeds with a degree of hesitation and diffidence of which he cannot divest himself, notwithstanding the experience he has so often had of the extreme indulgence of the public on his account: for, as the objects he aims at are, in his eyes, not of a trivial, but very important nature; and as the care of selecting, arranging, and guarding against error, and whatever might eventually prove in any way pernicious to society, must devolve entirely upon himself, he feels a weight of responsibility, of which, though he wishes not to divest himself, he cannot but be deeply sensible.

It may not be improper to warn the reader, that although this work assumes somewhat of the same form, and will be published at the same time with the usual monthly publications, it will in few other respects resemble them. It will contain no news, nor chronological series of events; neither will there be found in it any plates for the mere purpose of ornament: but no reasonable expence will be spared in obtaining correct drawings of subjects that shall become necessary for illustration, which will be engraved in such a manner

as, he has no doubt, will give general satisfaction. These engravings will be introduced as occasion shall call for, without any attempt to preserve an uniformity in this respect in the different numbers of the work. It is easy for the editor also, to foresee that these engravings will be much more numerous as the work advances, than can be required near the beginning of it.

To conclude, the editor, who is not entirely unknown to the public, will omit nothing within his power to render this work as deserving of favour as possible. Should the public indulgence be such as decisively to mark its approbation of this attempt, he will proceed in it with all the alacrity that is suitable to his time of life, while health shall permit. Among other good effects, it may serve to rouse and to keep alive in him, a little longer than might otherwise be the case, those active powers of the mind, the due exercise of which, he thinks, must ever constitute a principal part of the pleasure of existence; especially in the evening of life, when it becomes so necessary to banish the recollection of joys that are past, and to cherish a spirit of beneficence which alone affords an unclouded prospect to those who look forward. In the language of Fenelon he may say, "*Je ne cherche ni biens, ni autorité sur la terre; je ne veux qu'aider ceux qui cherchent la justice et la vertu.*" Should want of health, or other unlooked for circumstances, oblige the editor to discontinue his literary labours, his readers may rest assured that this event shall not take place without their knowledge; for, of whatever insignificance his name may be, he will on no account consent that that name shall ever be prostituted to serve any unworthy purpose in life.

During the continuance of war, little reliance can be placed on literary communications from abroad; but when peace shall be given to Europe, the editor, by means of the extensive correspondence he established in most countries on the globe, through the intervention of the Bee, may with confidence rely on obtaining from foreign parts an abundant supply of original communications.

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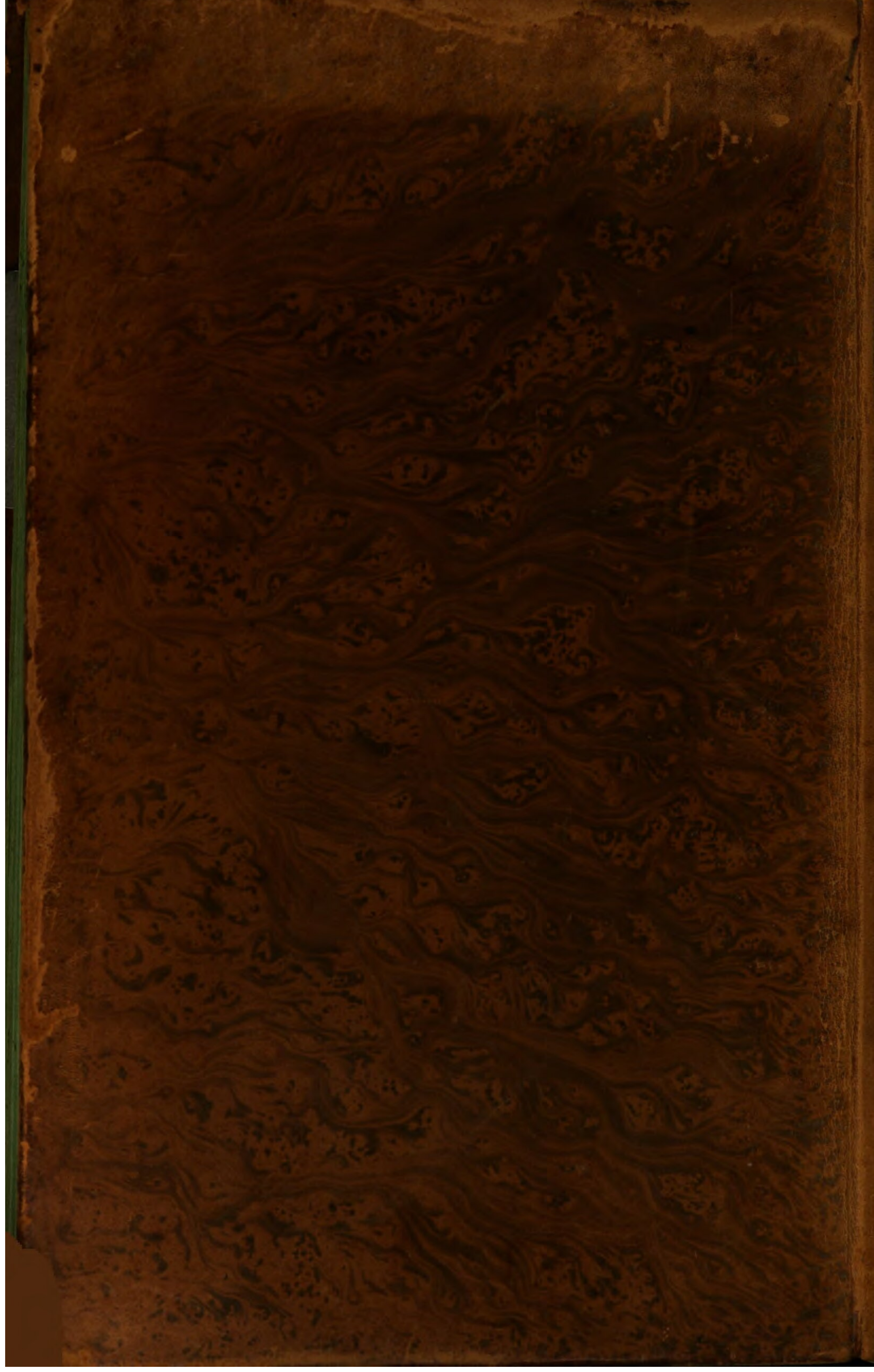
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